F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS
WHAT'S NEW

- Updated California Greenhouse Gas Evaporative Emissions Guidance
- Updated Electrical and Fusing Documentation
- Added WIFI/Embedded Modem and Antenna installation Guidance
- New Sunload Sensor(Autolamp) Installation Guidance
- PARCEL DELIVERY PACKAGE (59P) Content Updated--F59 ONLY
- Driver Assist Technology Package 1 added (21B)--- F-59 ONLY

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS
INDEX

F-53 / F-59	Page
WHAT'S NEW	1
INDEX	2
INTRODUCTION	3
F-53 MOTORHOME MODEL LINEUP & WEIGHTS	4
F-53 MOTORHOME DIMENSIONAL DATA	5
F-53 MOTORHOME FRONT STRUCTURE	6
F-53 MOTORHOME FRAME CROSSMEMBER LOCATIONS	7
F-53 MOTORHOME AXLE / TIRE / VEHICLE HEIGHT DATA	8
F-53 Engine Removal Zone	9
F-59 COMMERCIAL CHASSIS MODEL LINEUP AND WEIGHTS	10
F-59 COMMERCIAL CHASSIS DIMENSIONAL DATA	11
F-59 COMMERCIAL CHASSIS FRONT STRUCTURE	12
F-59 COMMERCIAL CHASSIS FRAME CROSSMEMBER LOCATIONS	13
F-59 COMMERCIAL CHASSIS AXLE / TIRE / VEHICLE HEIGHT DATA	14
F-59 COMMERCIAL CHASSIS TEMPORARY SHIPPING COMPONENTS	15
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS FUEL FILLER PIPE	16
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS EVAPORATIVE EMISSIONS	17
EVAP CANISTER CLIMATE CONTROL - GHG EVAPORATIVE EMMISSIONS	18
ELECTRONIC STABILITY CONTROL - VEHICLE MODIFICATIONS	19
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS	20

F-53 / F-59	Page
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS	21
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS (Cont'd)	22
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS (Cont'd)	23
F-53 MOTORHOME / F-59 COMMERCIAL BODY & ELECTRICAL INSTALLATION RECOMMENDATIONS	24
F-53 MOTORHOME / F-59 COMMERCIAL ELECTRICAL SYSTEM	25
F-53 MOTORHOME / F-59 COMMERCIAL ELECTRICAL SYSTEM	26
F-53 MOTORHOME / F-59 COMMERCIAL BODY & ELECTRICAL INSTALLATION RECOMMENDATIONS	27
WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION	28
WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION (Cont'd)	29
WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION (Cont'd)	30
WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION (Cont'd)	31
WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION (Cont'd)	32
Sensors: Sunload Package for autolamp use only (For Stripped Chassis application)	33
Sensors: Sunload Package for autolamp use only (For Stripped Chassis application)	34
Light Sensor Connection Check for Stripped Chassis	35
Revision Table	36

F-53 MOTORHOME
INTRODUCTION

Important Notices

The information described herein is believed to be correct at the time of publication, but accuracy cannot be guaranteed. Ford reserves the right to discontinue models or change specifications or designs at any time without notice and without incurring any obligation.

Representations regarding the compliance of any Ford- manufactured incomplete vehicle to any rule, regulation or standard issued pursuant to the National Traffic and Motor Vehicle Safety Act or the Canadian Motor Vehicle Safety Act are set forth only in the Incomplete Vehicle Manual (IVM) which accompanies each incomplete vehicle.

Regulations such as those issued by the Federal Highway Administration (FHA) or issued pursuant to the Occupational Safety and Health Act (OSHA), and/or state, provincial, and local laws and regulations may require installation of additional equipment for the particular use intended for the vehicle. It is the responsibility of the subsequent stage manufacturer or completed vehicle alterer and the vehicle purchaser to ascertain how the vehicle will ultimately be used, if FHA, OSHA or state provincial or local regulations apply and how the vehicle as completed will comply with those requirements. Nothing contained herein is to be construed as a representation that such equipment required for the particular use intended has been installed on the completed or incomplete vehicle.

Reference Information

Ford Body Builder Advisory Service Publications

This document is an example of a program-specific Body Builders Layout Book (BBLB) published by the Ford Body Builder Advisory Service (BBAS) team. Each Ford Commercial Truck vehicle line has a similar document that aims to provide detailed information which may be of interest to a subsequent-stage manufacturer or alterer.

The Ford Transit and Transit Connect also have a Body and Equipment Mounting Manual (BEMM), which is a comprehensive resource dedicated to body and equipment mounting information.

Yet another source of program-specific information are the “Vehicle Specification” documents available on the Ford BBAS website. Information typically found in these documents are: vehicle curb and accessory weights, vehicle dimensions, component descriptions, capacities, GAWRs, alternator output, powertrain output and gear ratios.

In addition to the program-specific documents, there are several Ford BBLB documents that contain general best practices or information on specific subjects that span multiple vehicle lines. These include:

- General BBLB - contains Definitions, Design Recommendations and Vehicle Storage Guidelines.
- Snow Plow BBLB
- Pickup Box Removal BBLB

These publications are updated every model year and can be accessed via the web at https://fordbbas.com under “Publications”. For BBLB and BEMM documents, expand the “Body Builder Layout Book” Section to view all available documents. For Vehicle Specifications, expand the “Vehicle Specifications” section. The website search function can be used to filter for specific content or vehicle line.

Ford Body Builder Advisory Service Bulletins

Occasionally, the Ford BBAS team will create an SVE “Bulletin” to address a specific issue or distribute important information in a timely manner. These documents can be accessed via the web at https://fordbbas.com under “Bulletins”. The website search function can be used to filter for specific content or vehicle line.

If applicable, information from each SVE bulletin will be incorporated into the appropriate BBLB document the following model year. In some cases, SVE bulletins wil continue to be referenced in this document.

Ford Body Builder Advisory Service Contact

The Ford Truck Body Builder Advisory Service may be consulted if questions regarding the completion of Ford commercial vehicles are not adequately addressed in the documentation described above. For assistance cal (877) 840-4338 or e-mail via the web at https://fordbbas.com under “Contact Us”. Please be as specific as possible with the request details to assure the most accurate and timely response.

Ford Service Publications

Ford Service Technical Resources (including wiring diagrams, repair manuals and diagnostic tool support) are available by subscription via the Motorcraft website: www.motorcraftservice.com

The following publications are examples of digital and printed manuals which are available from Helm Incorporated; call 1-800-782-4356 or contact Helm, Inc. at their website www.helminc.com:

- Ford Truck Shop Manuals
- Ford Towing Manuals
- Ford Wiring Diagrams

F-53 MOTORHOME MODEL LINEUP

Drive/WB (in.)	Engine/ Transmission	Maximum GVWR (lbs.)	Maximum Payload (lbs.) (1)	Maximum GCWR/Trailer Weight (lbs.)	GAWR (lbs.) (2)		Base Strip Chassis Curb Weight (lbs.) (3)		
					Front	Rear	Front	Rear	Total
4x2 — 158	7.3L/Auto	16,000	9690	23,000/7000	6500	11,000	3088	3219	6307
4x2 — 178	7.3L/Auto	16,000	9670	23,000/7000	6500	11,000	3109	3221	6330
	7.3L/Auto	18,000	11,630	23,000/5000	7000	12,000	3122	3240	6362
4x2 — 190	7.3L/Auto	16,000	9650	23,000/7000	6500	11,000	3111	3232	6343
	7.3L/Auto	18,000	11,590	23,000/5000	7000	12,000	3176	3227	6403
4x2 — 208	7.3L/Auto	18,000	11,530	23,000/5000	7000	12000	3223	3241	6464
	7.3L/Auto	20,500	13,970	26,000/5500	7000(4)	13,500	3259	3271	6530
	7.3L/Auto	22,000	15,300	26,000/4000	8000	15,000	3289	3410	6699
4x2 — 228	7.3L/Auto	18,000	11,460	23,000/5000	7000	12,000	3275	3257	6532
	7.3L/Auto	20,500	13,900	26,000/5500	7000(4)	13,500	3311	3287	6598
	7.3L/Auto	22,000	15,210	26,000/4000	8000	15,000	3348	3437	6785
	7.3/Auto	24,000	16,730	30,000/6000	9000	15,500	3500	3767	7267
	7.3L/Auto	26,000	18,720	30,000/4000	9000	17,500	3500	3779	7279
4x2 — 242	7.3L/Auto	22,000	15,140	26,000/4000	8000	15,000	3390	3462	6852
	7.3L/Auto	24,000	16,660	30,000/6000	9000	15,500	3542	3792	7334
	7.3L/Auto	26,000	18,650	30,000/4000	9000	17,500	3542	3804	7346
4x2 — 252	7.3L/Auto	24,000	16,610	30,000/6000	9000	15,500	3555	3826	7381
	7.3L/Auto	26,000	18,600	30,000/4000	9000	17,500	3572	3822	7394

(1) Load rating represents maximum allowable weight of people, cargo and body equipment and is reduced by optional equipment weight.

(2) Gross Axle Weight Rating is determined by the rated capacity of the minimum component of the axle system (axle, springs, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVW rating or GAWR (front or rear).

(3) Base Curb Weights shown above consider the strip chassis weight with standard equipment, full fuel tank and other fluids filled to capacity. Optional equipment weights are in pounds as follows (Front/Total): 19.5" x 6.75" Tires and Wheels (optional with 22,000-lb GVWR only) (-39/-76); Track Bar Heavy-Duty Front Suspension (optional with 16,000-lb. GVWR only) (32/32).

(4) Optional F/GAWR 7500 lbs.

It is recommended that the Vertical Center of Gravity of the completed vehicle (CGv) not exceed the following values, as measured from the ground in any loading condition:

F53 Motorhome: 55 Inches

The Vertical Center of Gravity of the completed vehicle (CGv) in any loading condition must fall within the range defined by the equations in Table A.

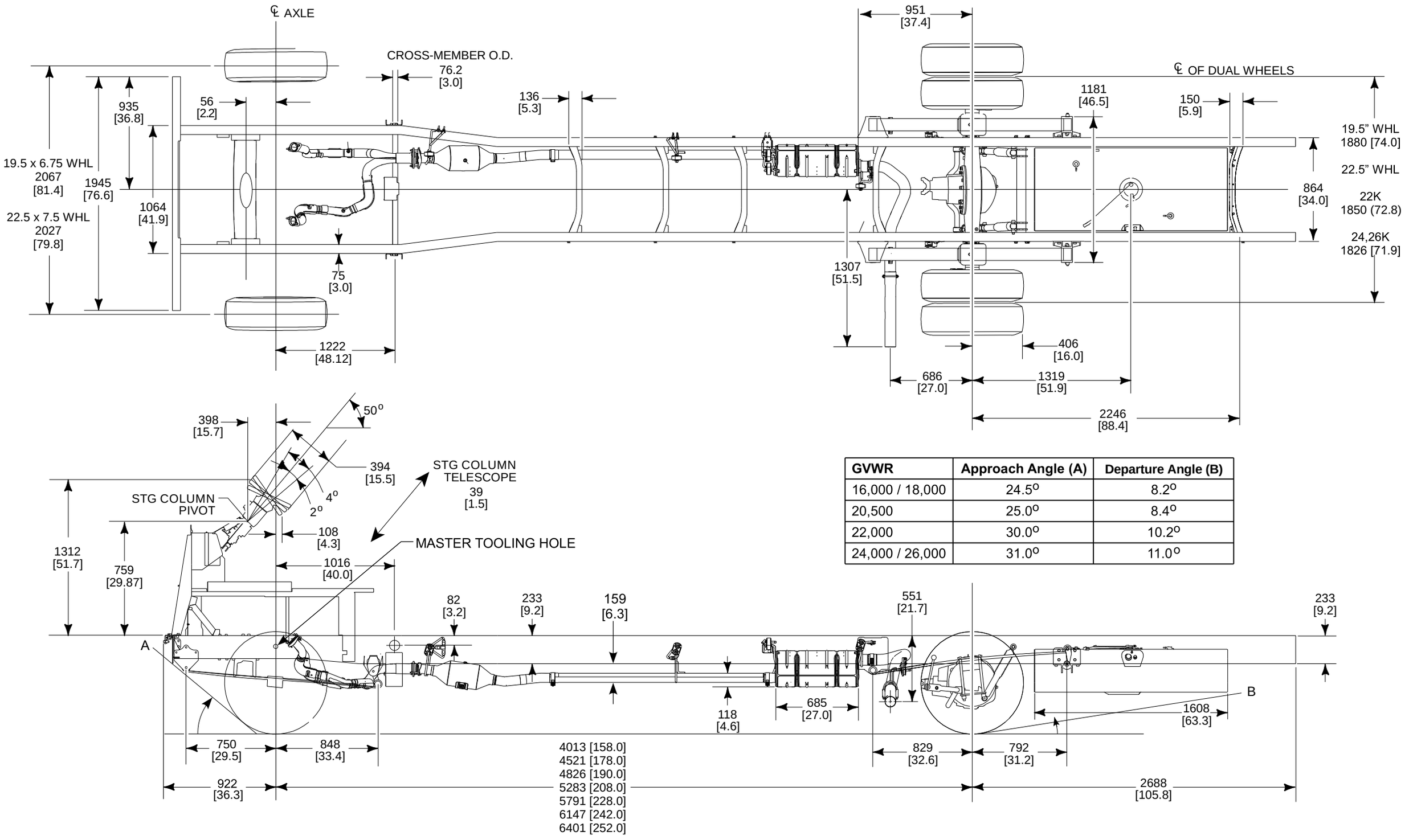
For Reference Only- Please see the Incomplete Vehicle Manual for more Information

TABLE A - Center of Gravity Limitations for Completed Vehicles

Vehicle Configuration	Maximum CG_v (inches)	Minimum CG_v (inches)
All	(4.55* CG_h) - (1.59 * WB)	(4.55 * CG_h) - (3.18 * WB)

NOTE: CG_h (horizontal center of gravity of the completed vehicle) and WB (wheelbase) values must be in inches, CG_h is measured from the centerline of front axle.

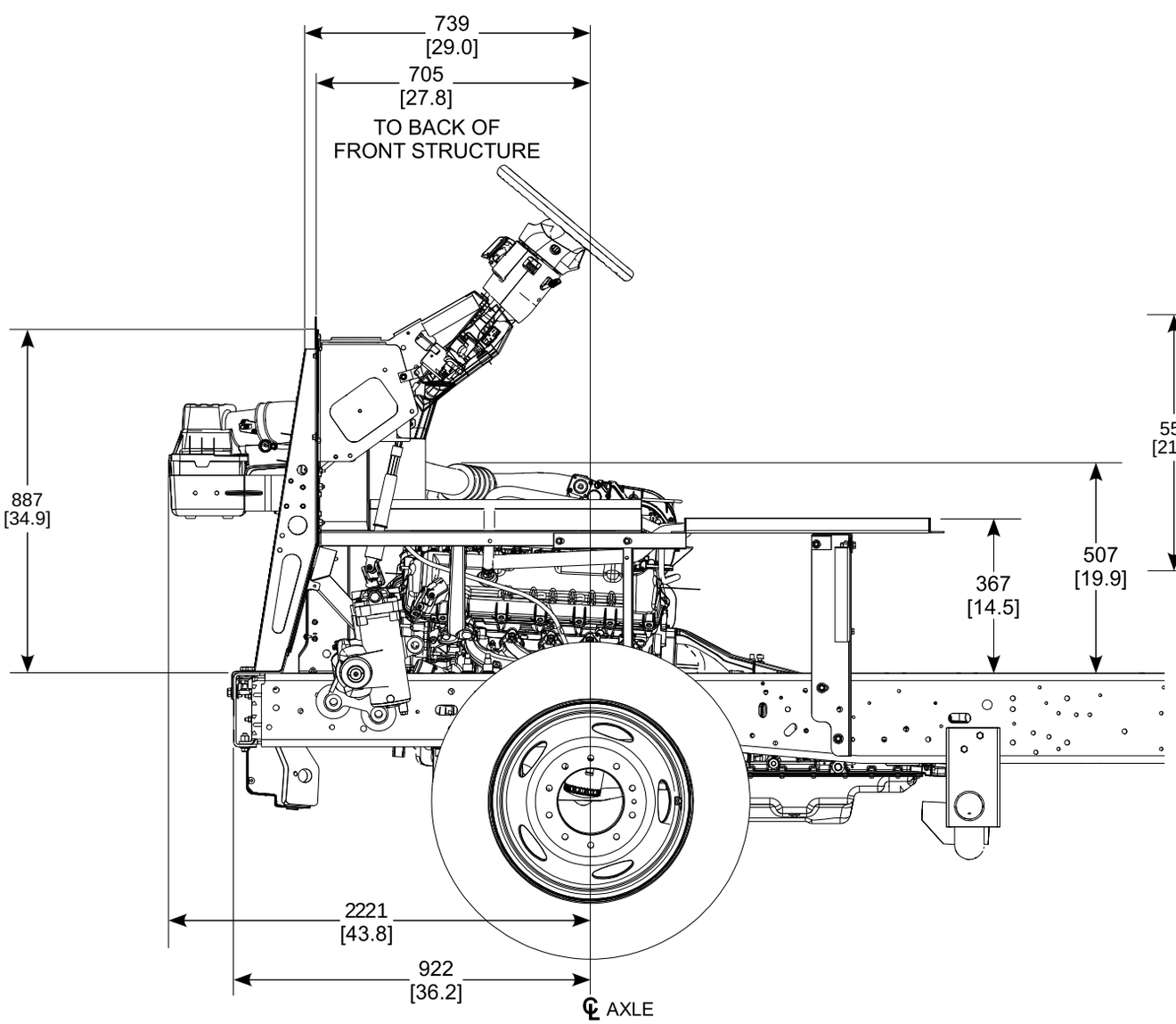
F-53 MOTORHOME
DIMENSIONAL DATA

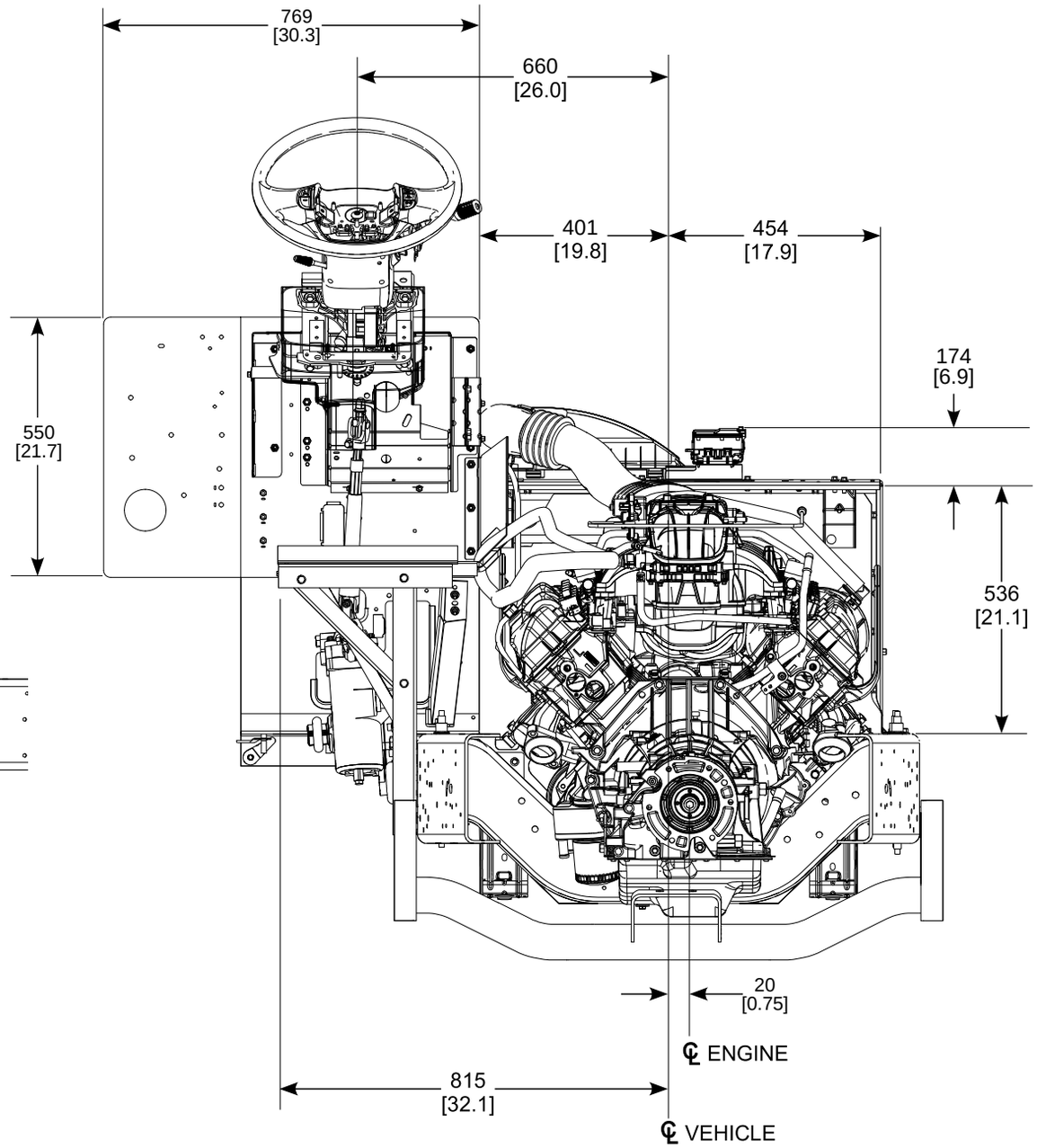


GVWR	Approach Angle (A)	Departure Angle (B)
16,000 / 18,000	24.5°	8.2°
20,500	25.0°	8.4°
22,000	30.0°	10.2°
24,000 / 26,000	31.0°	11.0°

NOTE — [ ] DIMENSIONS ARE INCHES.

F-53 MOTORHOME
FRONT STRUCTURE

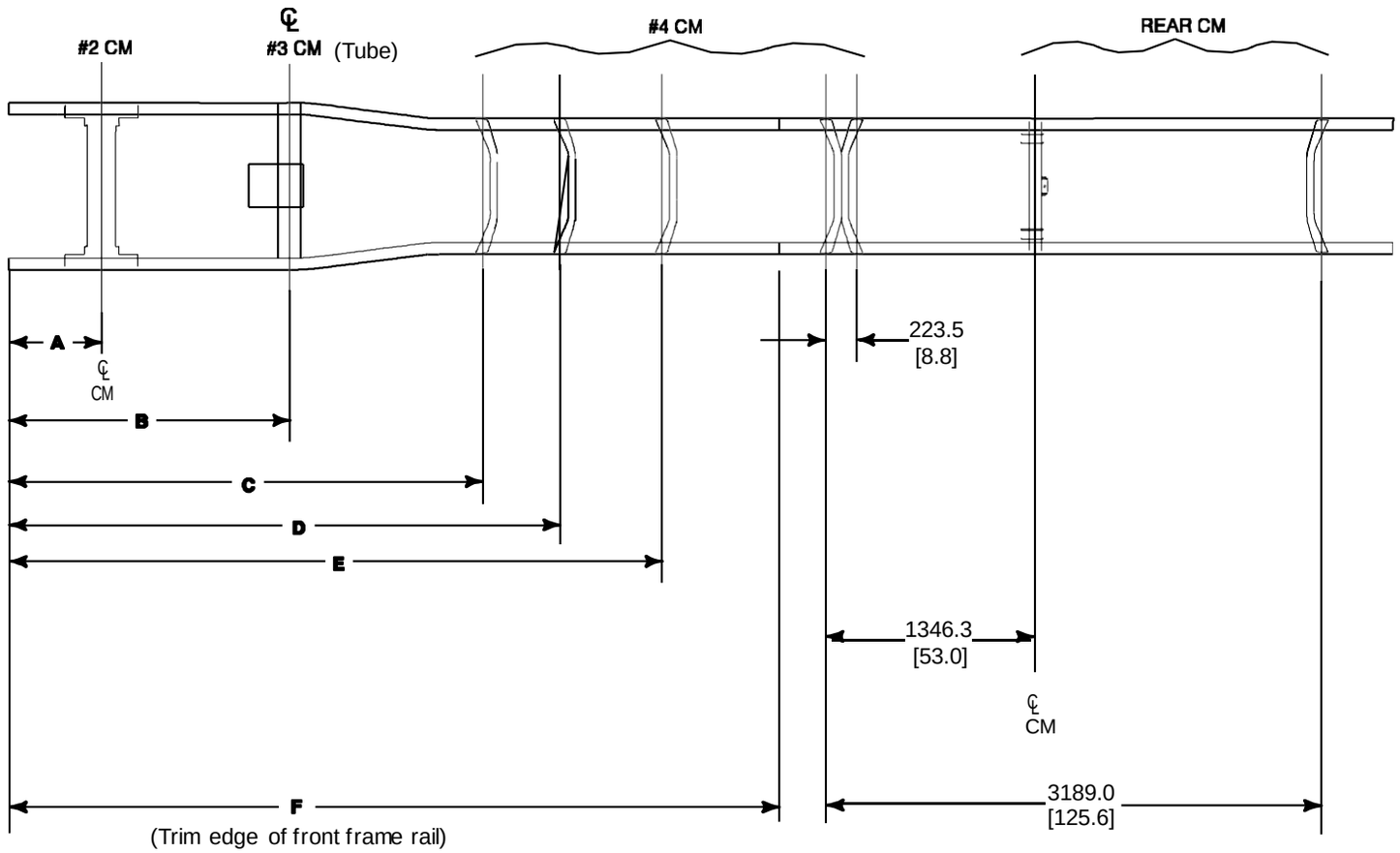




NOTE — [ ] DIMENSIONS ARE INCHES.

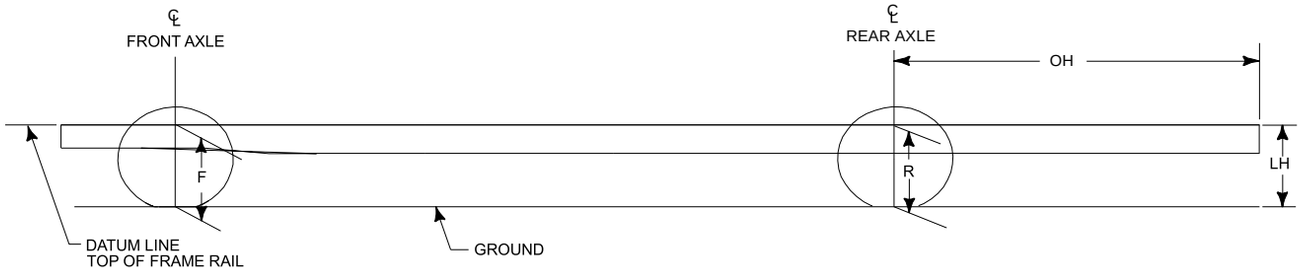
F-53 MOTORHOME
FRAME CROSSMEMBER LOCATIONS

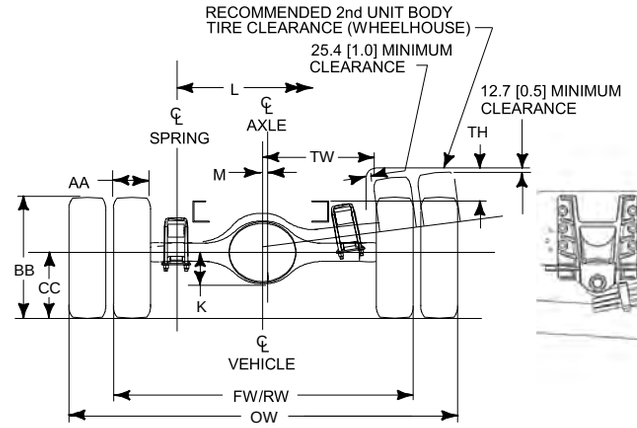
DIM.	158" WB	178" WB	190" WB	208" WB	228" WB	242" WB	252" WB
A	796 [31.3]	796 [31.3]	796 [31.3]	796 [31.3]	796 [31.3]	796 [31.3]	796 [31.3]
B	2073 [81.6]	2073 [81.6]	2073 [81.6]	2073 [81.6]	2073 [81.6]	2073 [81.6]	2073 [81.6]
C	NA	NA	NA	3002 [118.2]	3282 [129.2]	3282 [129.2]	3405 [134.1]
D	NA	NA	NA	NA	4004 [157.6]	4004 [157.6]	4329 [170.4]
E	2994 [117.9]	3385 [133.3]	3436 [135.3]	4147 [163.3]	4655 [183.3]	4655 [183.3]	4885 [192.3]
F	3828 [150.7]	4336 [170.7]	4640 [182.7]	5098 200.7]	5606 [220.7]	5962 [234.7]	6216 [244.7]
MEASUREMENTS TAKEN FROM FRONT EDGE OF LOWER FLANGE OF RAIL							

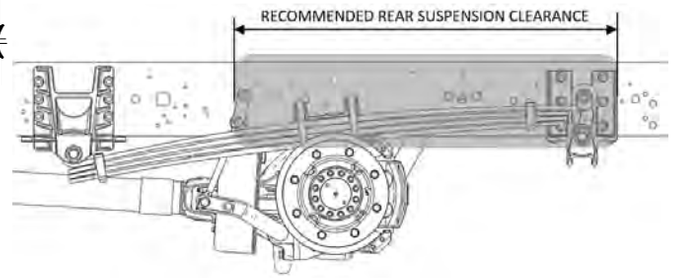


NOTES — UNLESS OTHERWISE NOTED, DIMENSIONS ARE TO THE CENTERLINE OF CROSSMEMBER FASTENERS.
— MEASUREMENTS FROM FRONT EDGE OF LOWER FRAME. SUBTRACT 9 MM IF MEASURED FROM TOP FRONT EDGE OF FRAME WEB.
— [ ] DIMENSIONS ARE INCHES.

F-53 MOTORHOME
AXLE / TIRE / VEHICLE HEIGHT DATA







MODEL	WB	GVWR [lbs]	BASE TIRE	F HEIGHT AT FRONT AXLE(1)(2) AT SPRING RATING	R HEIGHT AT REAR AXLE(1)(2) AT SPRING RATING	LH(2) AT SPRING RATING	OH	K	L	M	AA	BB	CC	FW	RW	REAR WHEEL MEASUREMENTS OW	TH	TW
F-53 Super Duty Class A Motorhome	4013 [158.0]	16,000	245/70R19.5	710 [28.0]	770 [30.3]	790 [31.1]	2688 [105.8]	214 [8.4]	1079 [42.5]	24 [1.0]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1848 [72.8]	2424 [95.4]	283 [11.1]	638 [25.1]
	4521 [178.0]																	
	4826 [190.0]																	
	4521 [178.0]	18,000	245/70R19.5	710 [28.0]	770 [30.3]	790 [31.1]	2688 [105.8]	214 [8.4]	1079 [42.5]	24 [1.0]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1848 [72.8]	2424 [95.4]	283 [11.1]	638 [25.1]
	4826 [190.0]																	
	5283 [208.0]																	
	5791 [228.0]																	
	5283 [208.0]	20,500	245/70R19.5	719 [28.3]	779 [30.7]	**790 [31.1]**	**2688** [105.8]	**214 [8.4]**	1079 [42.5]	**24 [1.0]**	**248 [9.8]**	**810 [31.9]**	**391 [15.4]**	**2327 [91.6]**	**1848 [72.8]**	**2424 [95.4]**	**283 [11.1]**	**638 [25.1]**
	5791 [228.0]																	
	5283 [208.0]	22,000	245/70R19.5	775 [30.5]	779 [30.7]	866 [34.1]	2688 [105.8]	214 [8.4]	1079 [42.5]	24 [1.0]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1848 [72.8]	2424 [95.4]	283 [11.1]	638 [25.1]
	5791 [228.0]																	
	5791 [228.0]		235/80R22.5	775 [30.5]	835 [32.9]	866 [34.1]	2688 [105.8]	214 [8.4]	1079 [42.5]	24 [1.0]	233 [9.2]	942 [37.1]	443 [17.4]	2305 [90.7]	1785 [70.3]	2423 [95.4]	221 [8.7]	640 [25.2]
	6147 [242.0]																	
	5791 [228.0]	24,000	255/80R22.5	792 [31.2]	861 [33.9]	894 [35.2]	2688 [105.8]	226.5 [8.9]	1079 [42.5]	24 [1.0]	252 [9.9]	941.5 [37.0]	455.7 [17.9]	2354 [92.7]	1783.4 [70.2]	2418 [95.2]	235 [9.2]	594 [23.4]
	6147 [242.0]																	
	6401 [252.0]																	
	5791 [228.0]	26,000	255/80R22.5	792 [31.2]	861 [33.9]	894 [35.2]	2688 [105.8]	226.5 [8.9]	1079 [42.5]	24 [1.0]	252 [9.9]	941.5 [37.0]	455.7 [17.9]	2354 [92.7]	1783.4 [70.2]	2418 [95.2]	235 [9.2]	594 [23.4]
	6147 [242.0]																	
	6401 [252.0]																	

(1)— The **F** and **R** Height Data represent dimensions from ground to “frame datum line” (top of frame rail) of a base/standard vehicle with no options.
(2)— These dimensions are for reference only. Actual height may vary due to production tolerances.

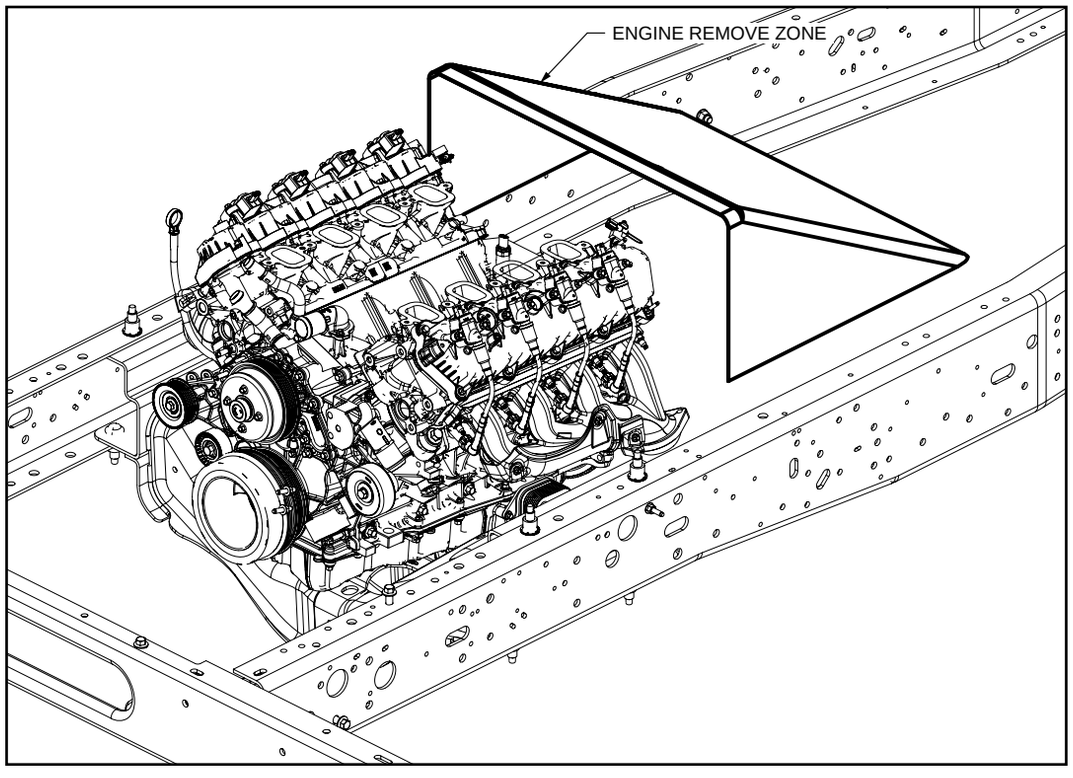
NOTE — [ ] DIMENSIONS ARE INCHES.

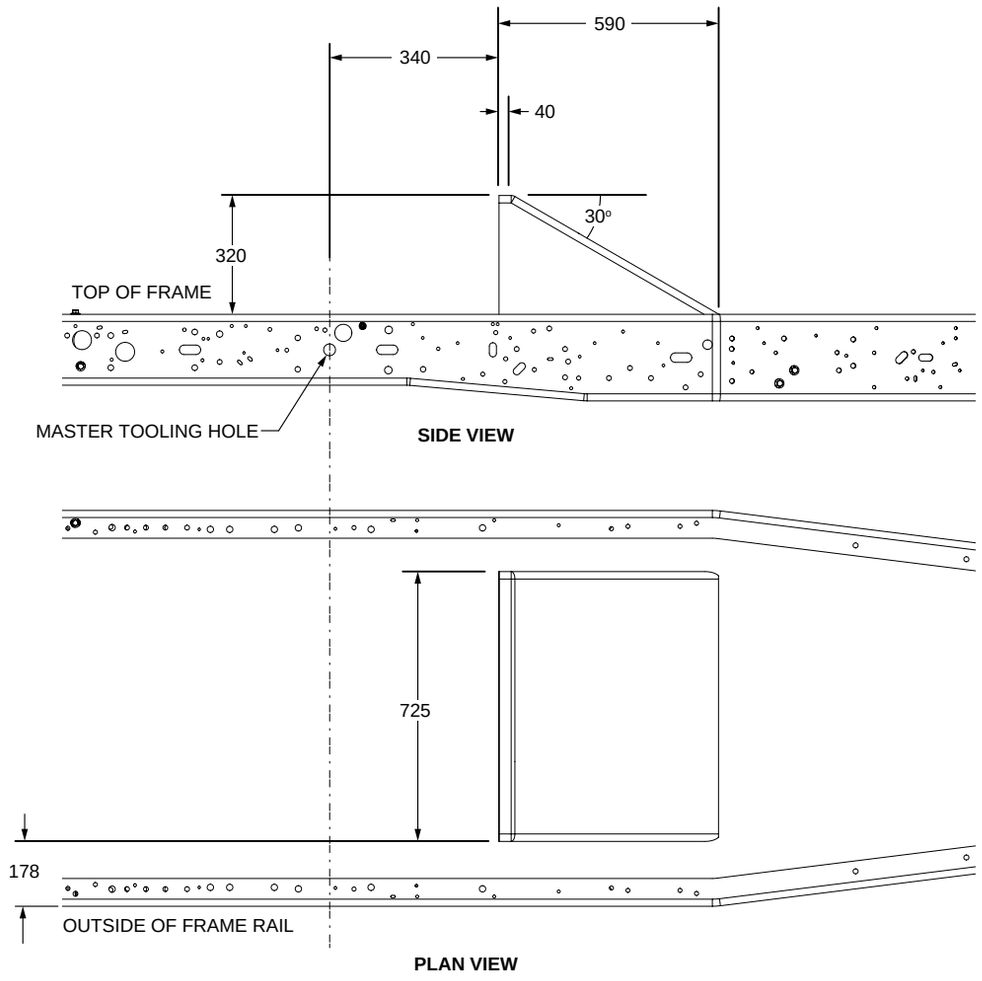
(Cont'd next page)

F-53 MOTORHOME

ENGINE REMOVAL CLEARANCE ZONE

- Detailed engine removal instructions available via Ford Workshop Manual, available via www.fordtechservice.dealerconnection.com web site (subscription fees may apply).
- Zone will require an open path for engine removal.
- Structural members within the Zone shall be designed to be easily removed and re-installed.
- Cutting and/or welding in service is not permissible.
- CAD file of this Zone is available via www.fordbbas.com/ContactUs.
  CAD File Name: F53_Engine_Remove_Zone





NOTE — [ ] DIMENSIONS ARE mm.

F-59 COMMERCIAL CHASSIS MODEL LINEUP

Drive/WB (in.)	Engine/ Transmission	Maximum GVWR (lbs.)	Maximum Payload (lbs.) (1)	Maximum GCWR/Trailer Weight (lbs.)	GAWR (lbs.) (2)		Base Strip Chassis Curb Weight (lbs.) (3)		
					Front	Rear	Front	Rear	Total
4x2 — 158	7.3L/Auto	16,000	10,080	23,000/7000	6500	11,000	3054	2857	5911
	7.3L/Auto	19,500	13,480	26,000/6500	7000	13,500	3197	2821	6018
4x2 — 168 (4)	7.3L/Auto	19,500	13,470	27,200/7700 (4)	7000	13,500	3198	2828	6026
4x2 — 178	7.3L/Auto	16,000	10,050	23,000/7000	6500	11,000	3191	2754	5945
	7.3L/Auto	19,500	13,460	26,000/6500	7000	13,500	3198	2835	6033
	7.3L/Auto	22,000 (4)	15,610	29,700/7700	8000	15,000	3276	3112	6388
4x2 — 190	7.3L/Auto	19,500	13,400	26,000/6500	7000	13,500	3209	2887	6096
4x2 — 208	7.3L/Auto	19,500	13,310	26,000/6500	7000	13,500	3227	2962	6189
	7.3L/Auto	22,000	15,610	26,000/4000	8000	15,000	3276	3112	6388
	7.3L/Auto	22,000	15,610	29,700/7700 (4)	8000	15,000	3276	3112	6388

(1) Load rating represents maximum allowable weight of people, cargo and body equipment and is reduced by optional equipment weight.

(2) Gross Axle Weight Rating is determined by the rated capacity of the minimum component of the axle system (axle, springs, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVW rating or GAWR (front or rear).

(3) Base Curb Weights shown above consider the strip chassis weight with standard equipment, full fuel tank and other fluids filled to capacity. Optional equipment weights are in pounds as follows (Front/Total): Pull Out Ramp Prep Package (optional with 208" wheelbase only) (50/85).

(4) Parcel Delivery Van Package only.

It is recommended that the Vertical Center of Gravity of the completed vehicle (CGv) not exceed the following values, as measured from the ground in any loading condition:

F59 Commercial GVWR 22,000 lbs and under - 48 Inches

F59 Commercial GVWR 24,000 lbs and above - 50 Inches

The Vertical Center of Gravity of the completed vehicle (CGv) in any loading condition must fall within the range defined by the equations in Table A.

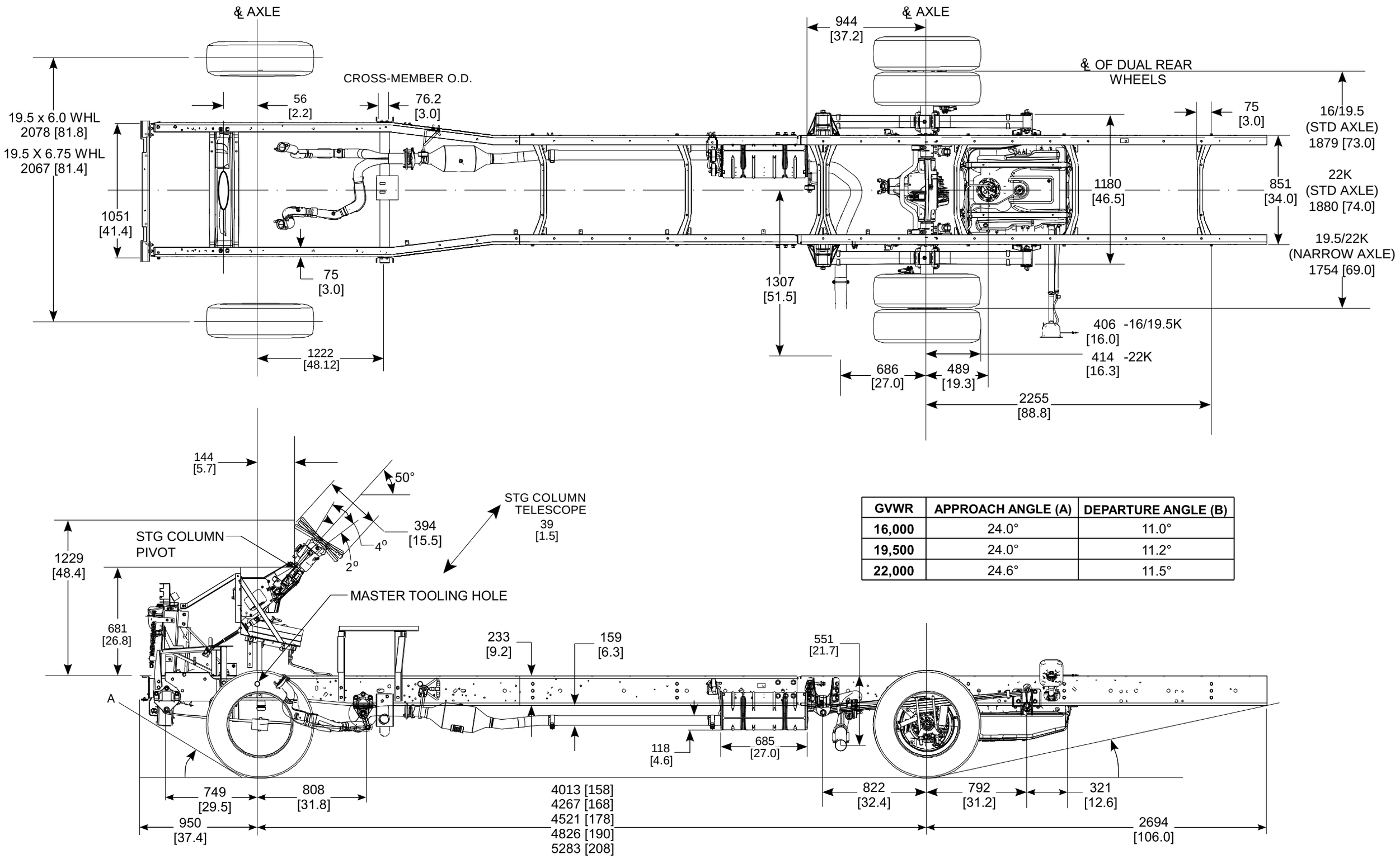
For Reference Only- Please see the Incomplete Vehicle Manual for more Information

TABLE A - Center of Gravity Limitations for Completed Vehicles

Vehicle Configuration	Maximum CG_v (inches)	Minimum CG_v (inches)
All	(4.55* CG_h) - (1.59 * WB)	(4.55 * CG_h) - (3.18 * WB)

NOTE: CG_h (horizontal center of gravity of the completed vehicle) and WB (wheelbase) values must be in inches, CG_h is measured from the centerline of front axle.

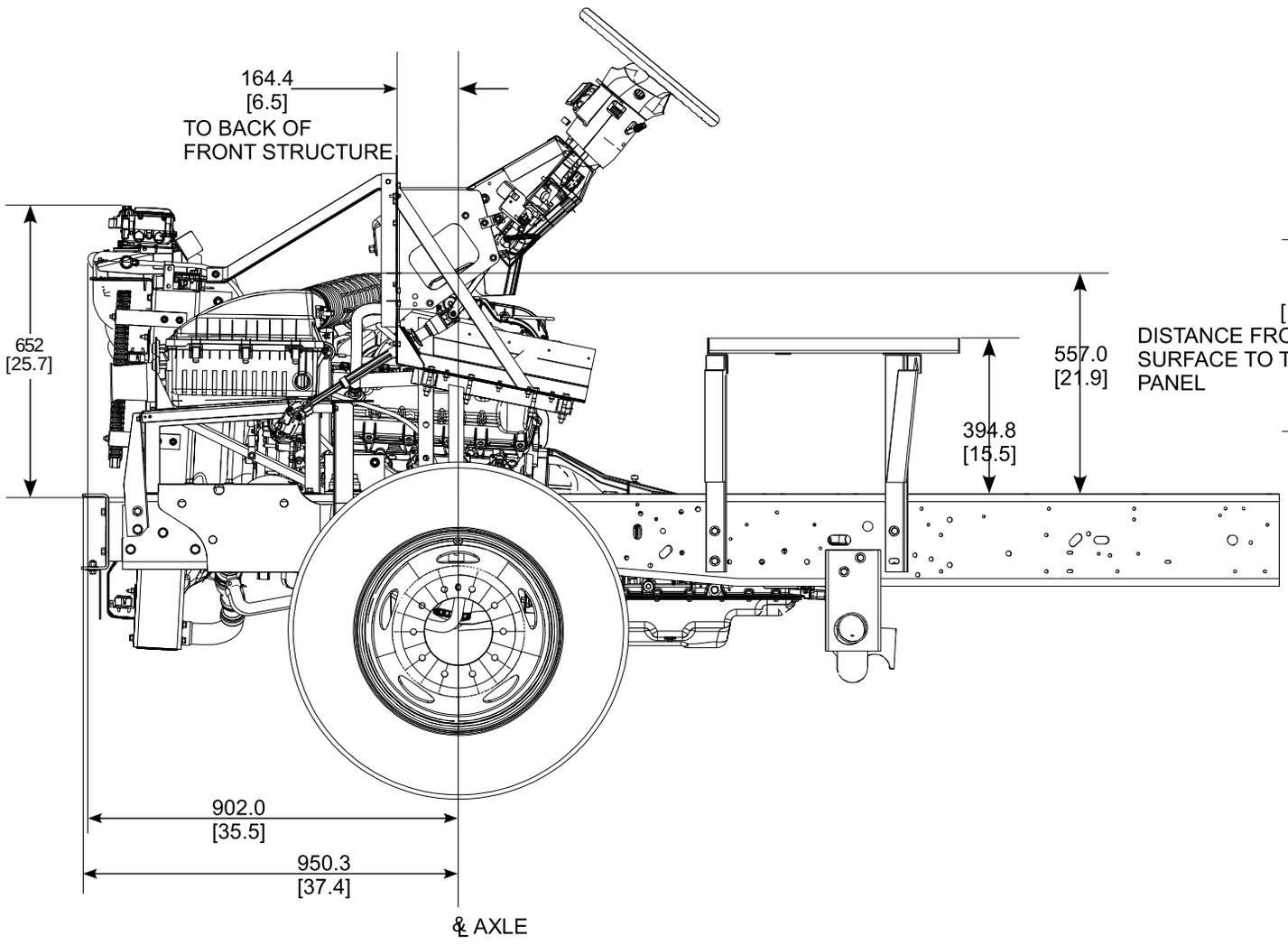
F-59 COMMERCIAL CHASSIS DIMENSIONAL DATA

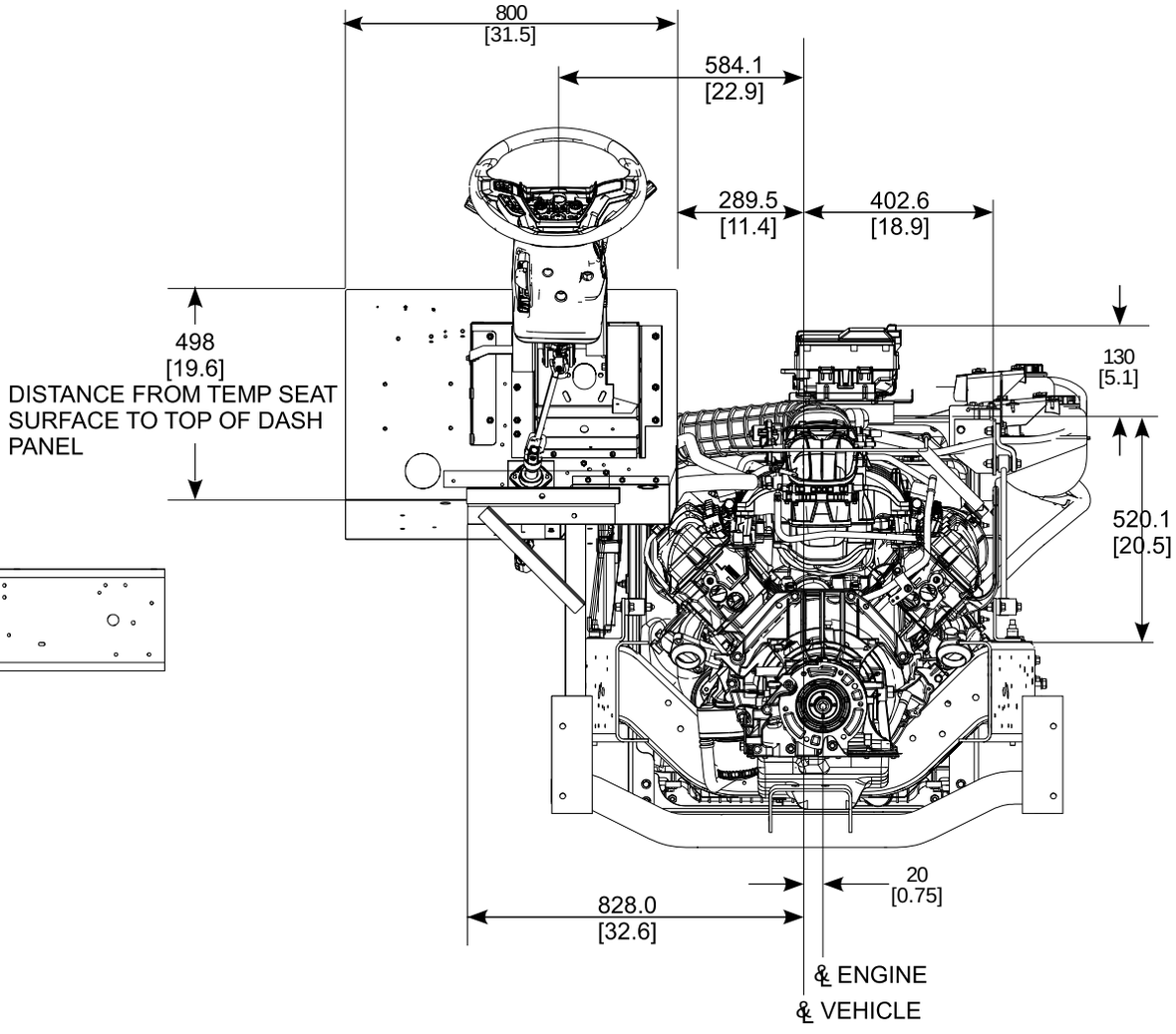


GVWR	APPROACH ANGLE (A)	DEPARTURE ANGLE (B)
16,000	24.0°	11.0°
19,500	24.0°	11.2°
22,000	24.6°	11.5°

NOTE — [ ] DIMENSIONS ARE INCHES.

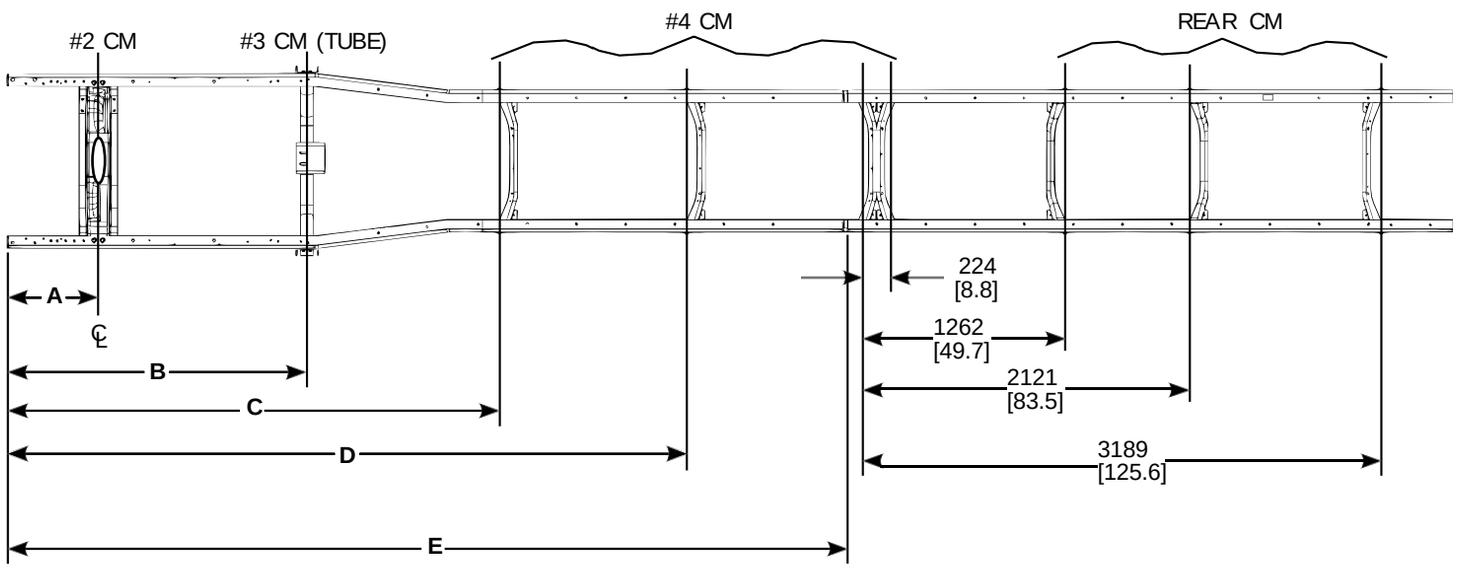
F-59 COMMERCIAL CHASSIS
FRONT STRUCTURE





NOTE — [ ] DIMENSIONS ARE INCHES.

F-59 COMMERCIAL CHASSIS
FRAME CROSSMEMBER LOCATIONS

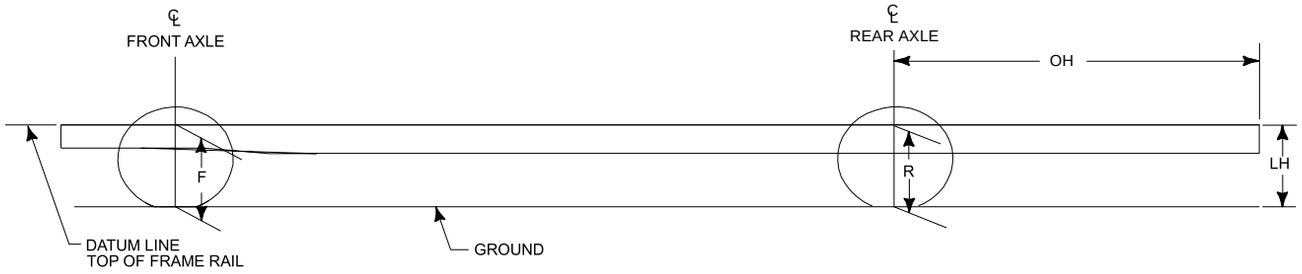


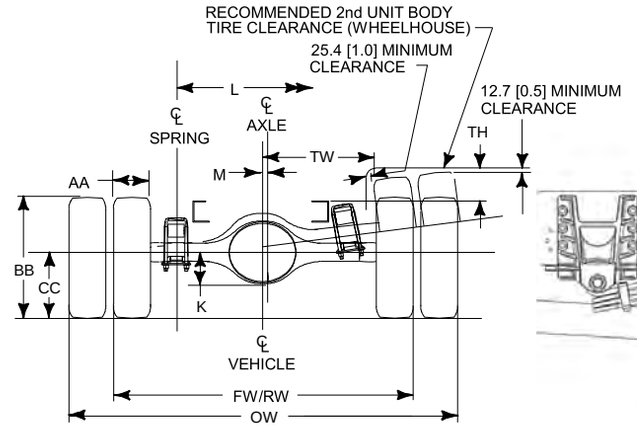
DIMENSION *	158" WB	168" WB	178" WB	190" WB	208" WB
A	796 [31.3]	796 [31.3]	796 [31.3]	796 [31.3]	796 [31.3]
B	2073 [81.6]	2073 [81.6]	2073 [81.6]	2073 [81.6]	2073 [81.6]
C	2994 [117.9]	3133 [123.3]	3385 [133.3]	3436 [135.3]	3002 [118.2]
D	NA	NA	NA	NA	4147 [163.3]
E	3828 [150.7]	4082 [160.7]	4336 [170.7]	4640 [182.7]	5098 [200.7]

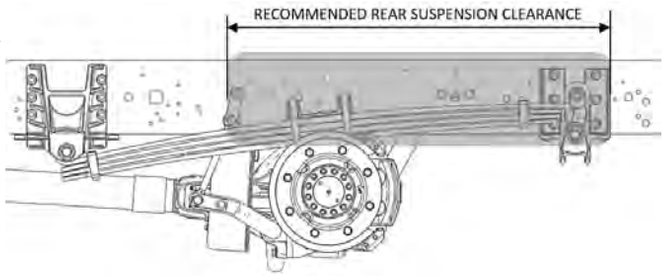
* **NOTE:** Measurement taken from front edge of lower rail flange

NOTES — UNLESS OTHERWISE NOTED, DIMENSIONS ARE TO THE CENTERLINE OF CROSSMEMBER FASTENERS.
— MEASUREMENTS FROM FRONT EDGE OF LOWER FRAME. SUBTRACT 9 MM IF MEASURED FROM TOP FRONT EDGE OF FRAME WEB.
— [ ] DIMENSIONS ARE INCHES.

F-59 COMMERCIAL CHASSIS
AXLE / TIRE / VEHICLE HEIGHT DATA





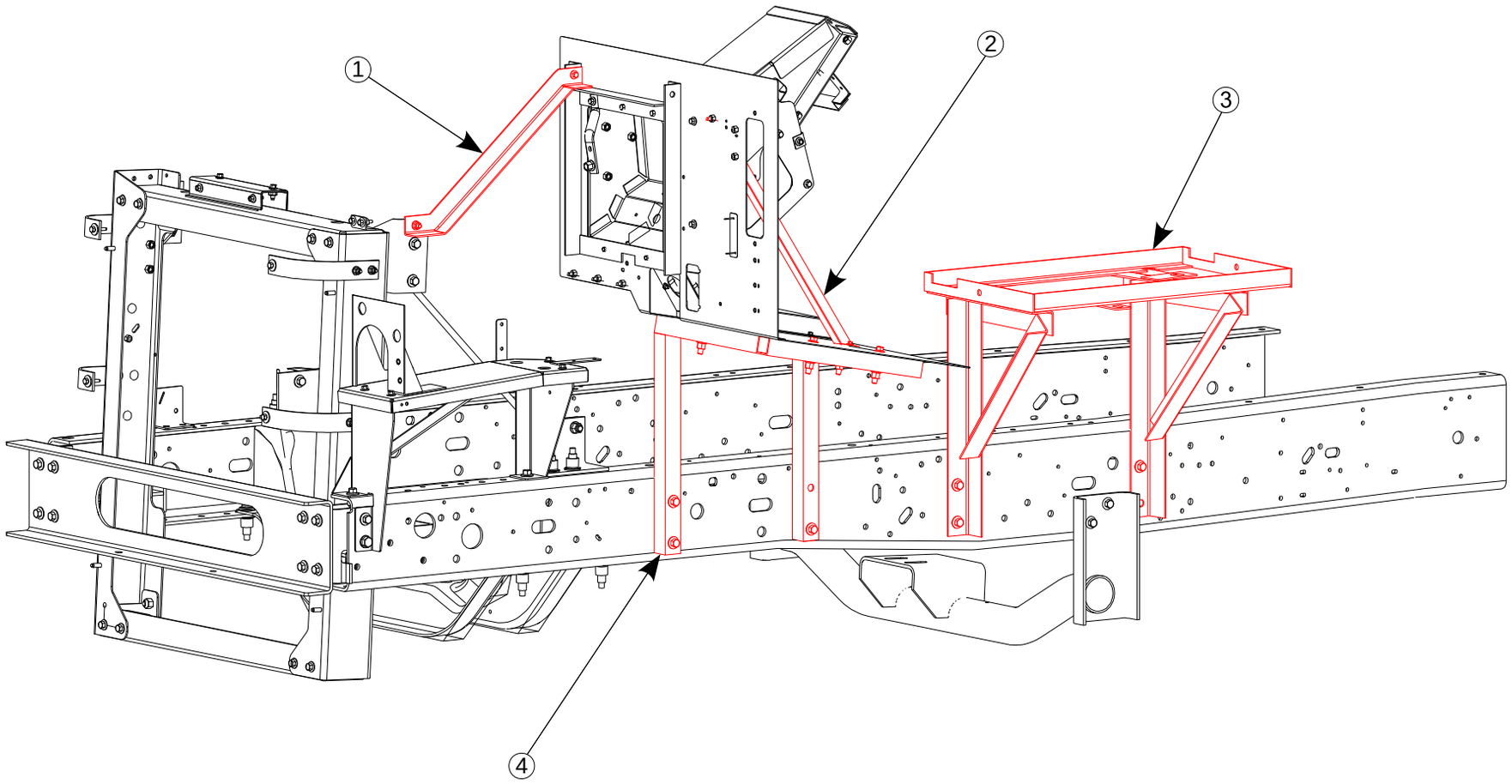


MODEL	WB	GVWR	BASE TIRE	F HEIGHT AT FRONT AXLE (1) (2)	R HEIGHT AT REAR AXLE (1) (2)	LH (2)	OH	K	L	M	AA	BB	CC	FW	RW	REAR WHEEL MEASUREMENTS		
				AT SPRING RATING	AT SPRING RATING	AT SPRING RATING										OW	TH	TW
F-59 SUPER DUTY COMMERCIAL CHASSIS	158	16,000	225/70R19.5	800 [31.5]	830 [32.7]	734 [28.9]	2688 [105.8]	177 [6.9]	1079 [42.5]	27.7 [1.1]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.0]	270 [10.6]	638 [25.1]
	178		225/70R19.5	800 [31.5]	830 [32.7]	734 [28.9]	2688 [105.8]	177 [6.9]	1079 [42.5]	27.7 [1.1]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.0]	270 [10.6]	638 [25.1]
	158	19,500	225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	168		225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2304 [90.7]	274 [10.8]	638 [25.1]
	178		225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	190		225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	208		225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	178	22,000	245/70R19.5	794 [31.3]	848 [33.4]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1846 [72.8]	2304 [90.7]	283 [11.1]	638 [25.1]
	208		245/70R19.5	794 [31.3]	848 [33.4]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1846 [72.8]	2304 [90.7]	283 [11.1]	638 [25.1]

(1) — The **F** and **R** Height Data represent dimensions from ground to “frame datum line” (top of frame rail) of a base/standard vehicle with no options.
(2) — These dimensions are for reference only. Actual height may vary due to production tolerances.
= measured in CAD @ Stripped Weight

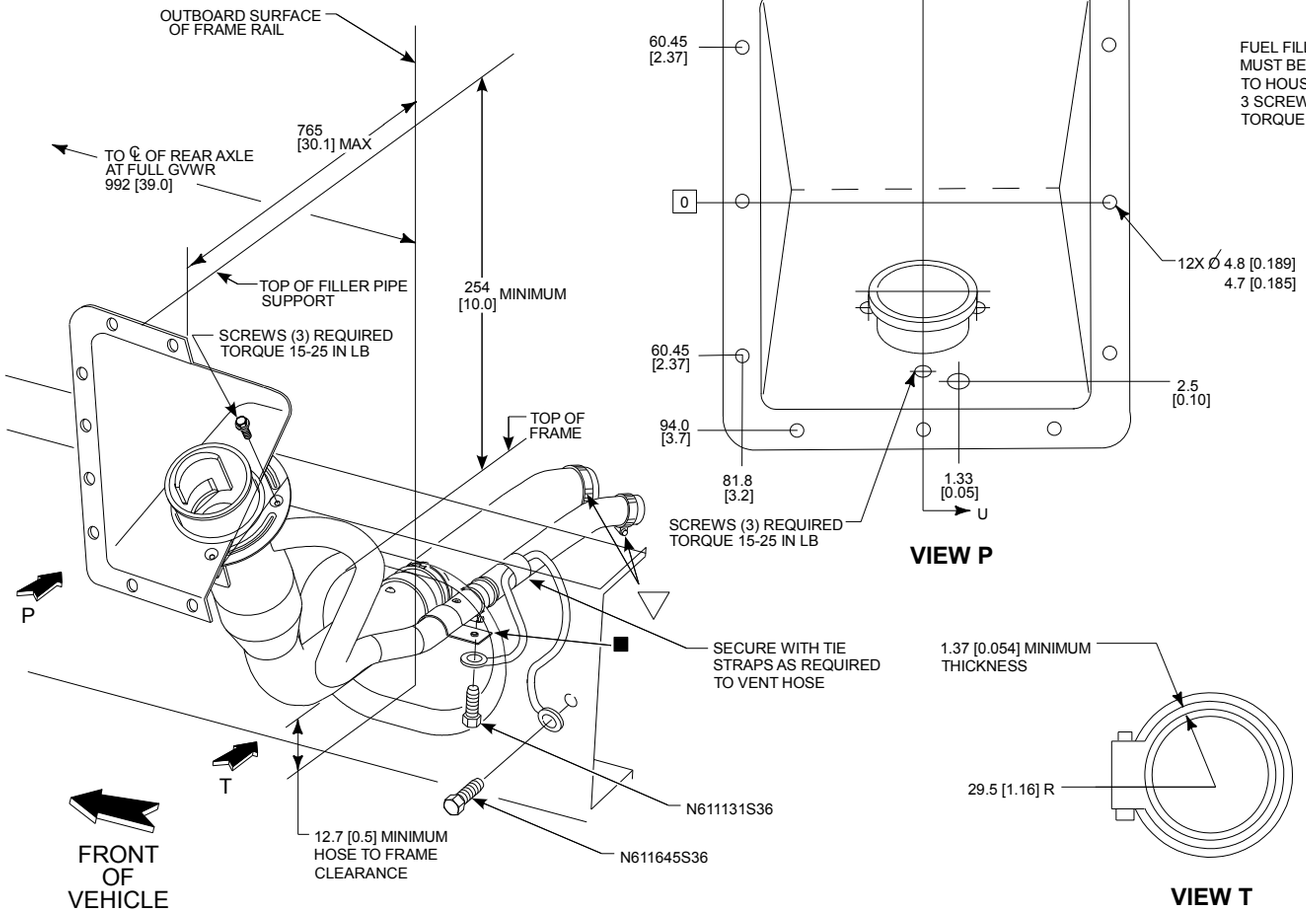
NOTE — [ ] DIMENSIONS ARE INCHES.

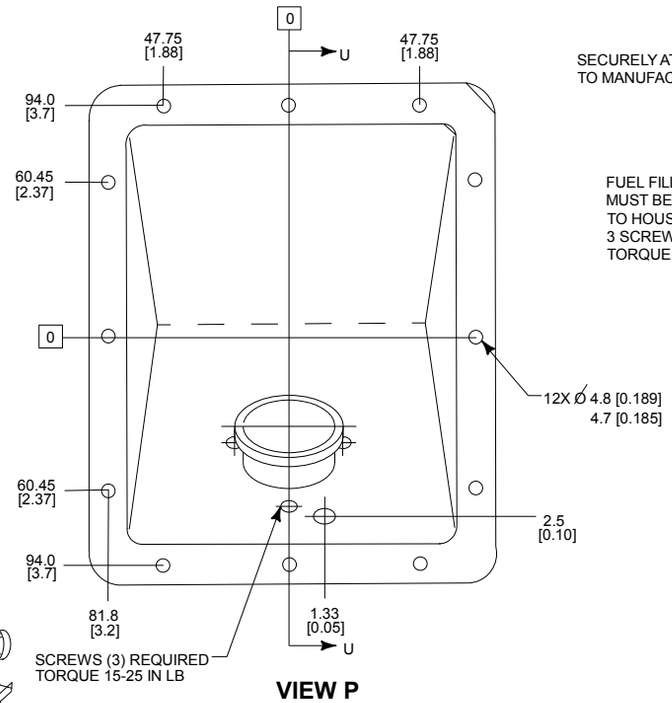
F-59 COMMERCIAL CHASSIS
TEMPORARY SHIPPING COMPONENTS



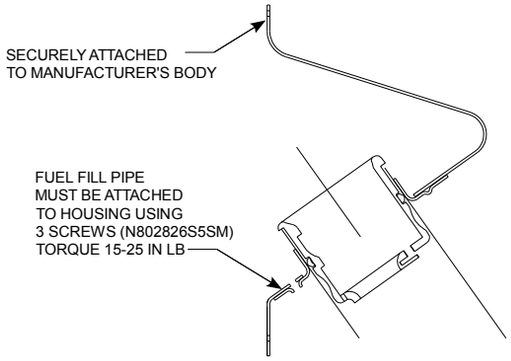
NOTE: Temporary Shipping Components
Remove all temporary covers, brackets and structures prior to vehicle completion.

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS
FUEL FILLER PIPE


OUTBOARD SURFACE OF FRAME RAIL
765 [30.1] MAX
℄ OF REAR AXLE AT FULL GVWR 992 [39.0]
TOP OF FILLER PIPE SUPPORT
254 [10.0] MINIMUM
SCREWS (3) REQUIRED TORQUE 15-25 IN LB
TOP OF FRAME
P
SECURE WITH TIE STRAPS AS REQUIRED TO VENT HOSE
T
12.7 [0.5] MINIMUM HOSE TO FRAME CLEARANCE
N611131S36
N611645S36
FRONT OF VEHICLE



VIEW P


SECURELY ATTACHED TO MANUFACTURER'S BODY
FUEL FILL PIPE MUST BE ATTACHED TO HOUSING USING 3 SCREWS (N802826S5SM) TORQUE 15-25 IN LB

SECTION U

VIEW T

✳ WORM GEAR DRIVEN HOSE CLAMP STRUCTURAL BRACKET AND BLIND RIVETS ARE NOT PROVIDED BY FORD MOTOR COMPANY

● DIMENSIONS USING HOSE AS SUPPLIED BY FORD MOTOR COMPANY

▽ WORM GEAR DRIVEN HOSE CLAMPS TORQUE 2.8 - 4.0 NEWTON METERS (25 - 35 IN LBS)

■ WORM GEAR DRIVEN HOSE CLAMP ✳ MUST FIT SECURELY OVER A 57.2 (2.25) O.D. FILL PIPE AND SECOND STAGE VEHICLE MANUFACTURERS BRACKET ✳

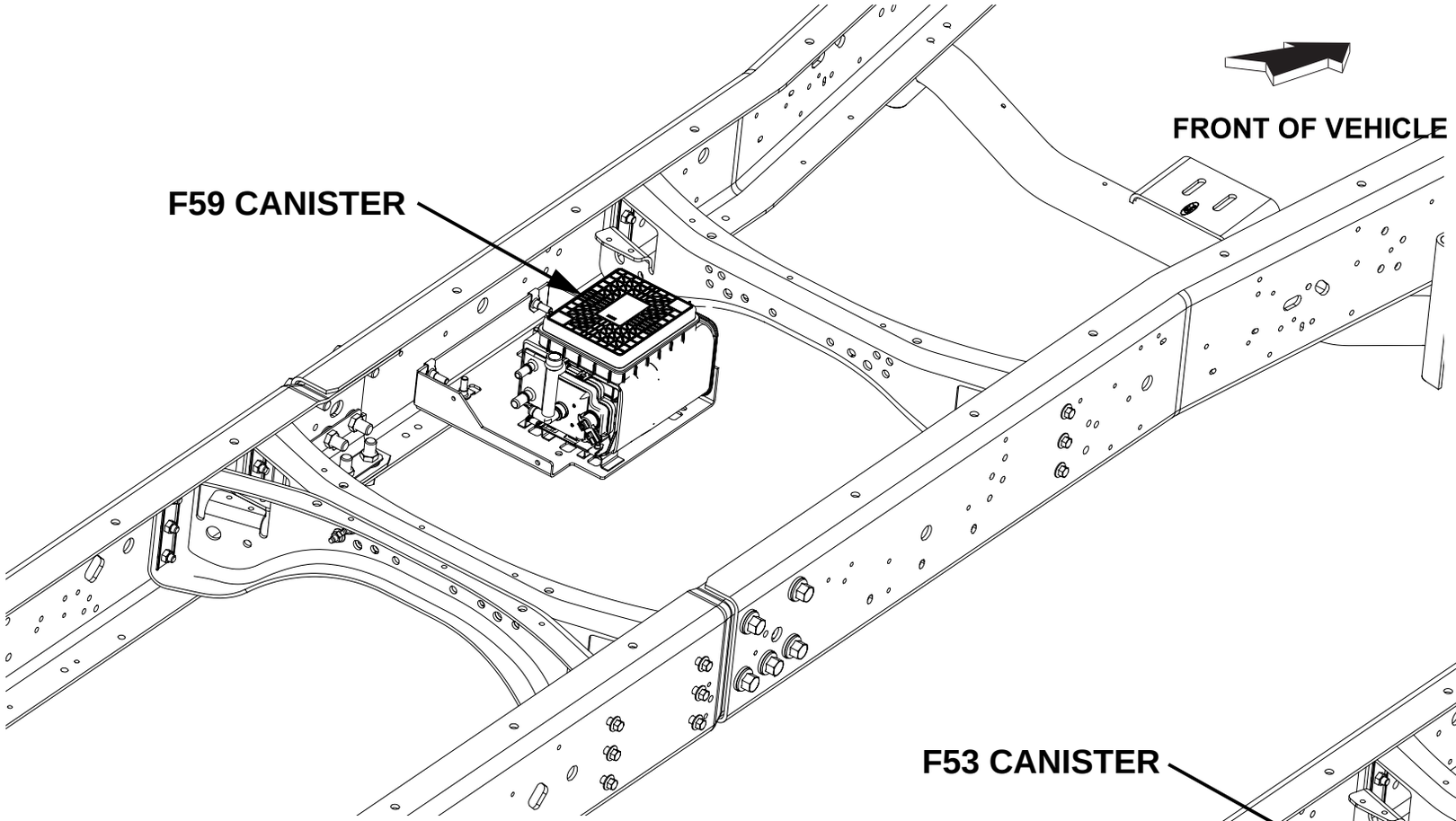
NOTE: MAKE SURE THE FILLER NECK SUPPORT IS INSTALLED PROPERLY AS PER THE NOTE IN THIS SECTION.

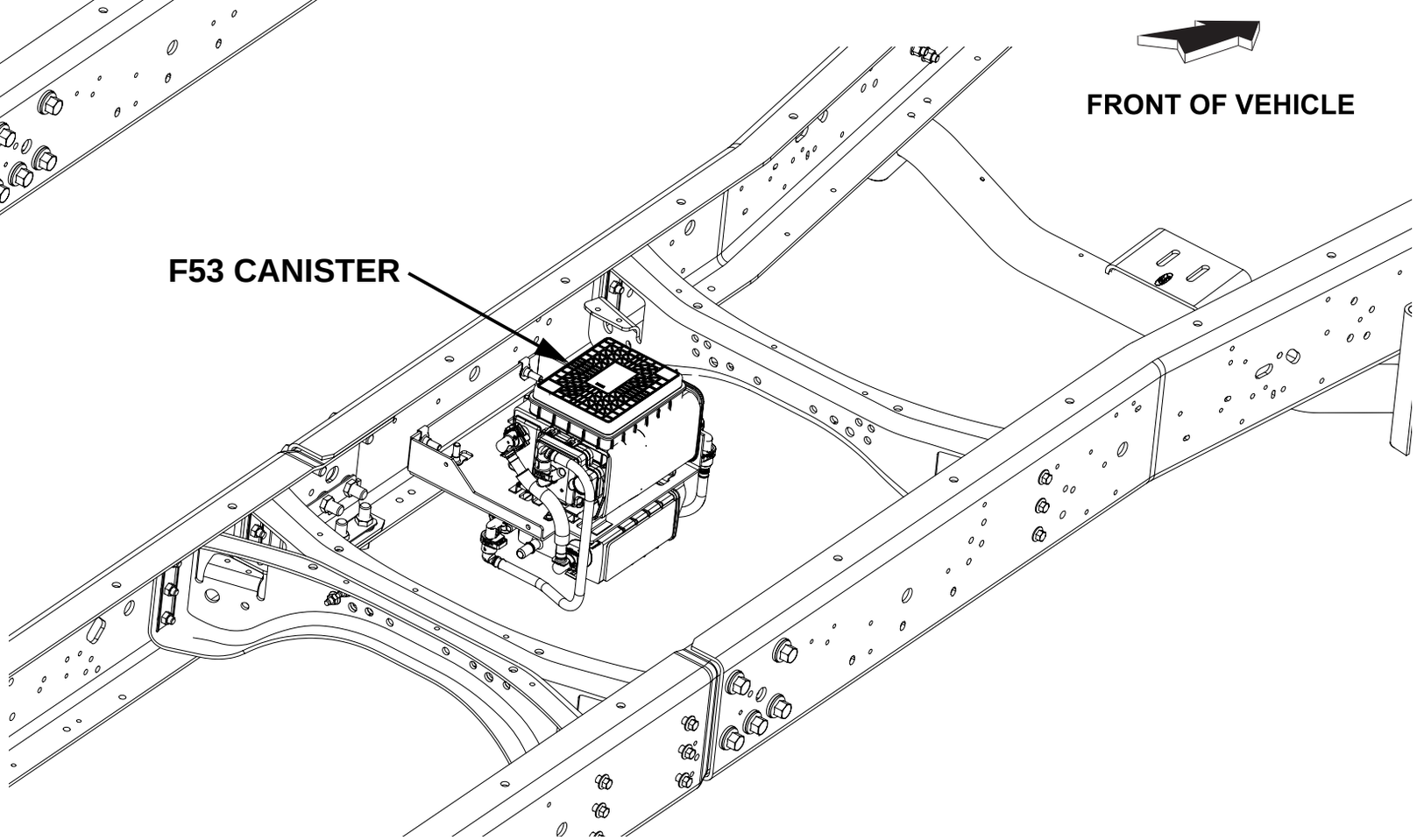
▽ CRITICAL CONTROL ITEM

WARNING:
It is mandatory to use the supplied rubber hose for installing the fuel pipe. Any increase in length or change in material of the supplied rubber hose will result in voiding the evaporate emissions certification.

NOTE — [ ] DIMENSIONS ARE INCHES.

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS
EVAPORATIVE EMISSIONS
EVAP CANISTER





CLIMATE CONTROL GREEN HOUSE GAS EVAPORATIVE EMISSIONS

For vehicles with only incomplete system options (vehicle is shipped without refrigerant)

Pursuant to California regulation 17 CCR §95663 and EPA 40CFR 1037.115(e), the specific leakage for this vehicle (as built by Ford Motor Company) is shown in the table below (see "J2727 Leakage Value" column). The Ford A/C Prep Package on the stripped chassis vehicle, if equipped, is an incomplete air conditioning system which must be completed to meet the leakage requirements. The intermediate or final-stage manufacturer must calculate the final system leakage. The spreadsheet used by Ford to calculate the J2727 Leakage is available and can be updated to reflect the modified system. In order to maintain vehicle compliance with a completed Ford air conditioning system, Ford will provide the final stage manufacturer's SAE J2727 leakage information and air conditioning schematics to California Air Resources Board (CARB). Please contact Ford BBAS to request a copy of the vehicle line specific GHG Evaporative Emissions Worksheet: https://fordbbas.com

MY	Vehicle Line	Features /Models	Evaporator	Powertrain	Refrigerant	Charge Size of A/C System (kg)	J2727 Leakage Value (g/yr)	Max Allowed Leakage[3]
2022	F5x	With Suction Line	N/A	7.3 L V8 Gas	R-134a	0.000	10.181	11.000
2022	F5x	Without Suction Line	N/A	7.3 L V8 Gas	R-134a	0.000	8.955	11.000

***No charge is added while shipping out the vehicle as it goes to the customer as an incomplete system.**

(Cont'd next page)

F-59 COMMERCIAL CHASSIS
GUIDELINES FOR MODIFYING FORD TRUCK WHEELBASES EQUIPPED WITH ELECTRONIC STABILITY CONTROL (ESC)

The 2021MY F-59 and F-53 have ESC (Electronic Stability Control) as optional feature content. Modification of the wheelbase can affect vehicle performance which could result in ABS or Stability Control faults/lights. The ESC system may also have a changed response from the production wheelbase configuration, but still provides acceptable driver assistance. It is the responsibility of the alterer or final stage manufacturer to evaluate modified vehicle configurations to ensure that vehicle performance is acceptable to their customer base.

Wheelbase modifications within the noted ranges below may necessitate a reflash of the ABS/ESC module to a new calibration. Any wheelbase outside of the noted ranges below will not be supported with calibrations. The Electronic Stability Control (ESC) feature will be supported when modifying F53 and F-59 Wheelbases (WB) as part of the intermediate or final stage upfit

F53 – Motorhome (Recreation Vehicle):
- 16K - 18K GVWR wheelbases between 158” and 238”
- 20.5K - 22K GVWR with 19.5” tires wheelbases between 168” and 184” and between 196” and 252”
- 22K - 26K GVWR with 22.5” tires wheelbases between 196” and 260”

Note: ESC shall not be ordered for wheel base reduc ons or stretches planned post assembly plant build outside the preceding GVWR ranges on F-Super Duty Basic (Stripped) Chassis

F59 – Step Van (Commercial Vehicle):
- 16K - 18K GVWR wheelbases between 158” and 184”
- 19.5k GVWR Hydroboost wheelbases between 158” and 216”
- 19.5k GVWR HydroMax wheelbase between 168” and 178”
- 20.5k - 22K GVWR wheelbases between 168” and 178” and between 197” and 208”

Note: ESC shall not be ordered for wheel base reductions or stretches planned post assembly plant build outside the preceding GVWR ranges on F-Super Duty Basic (Stripped) Chassis

Special Notes: The chassis wheelbase shall not be modified shorter than the shortest for each model (GVWR offered). For vehicles under 10K GVWR, FMVSS 126 does apply for ESC function and will need to be tested the by alterer or final stage manufacturer - refer to the Incomplete Vehicle Manual for specific FMVSS/CMVSS information

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

BODY AND SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS

GENERAL NOTES

1. Rear departure angle of 8.1° minimum for the motorhome chassis should be maintained to protect the fuel tank at GVWR. Rear bumpers or underbody skids should be considered to minimize interference to ground.

BODY

1. Any structural member removed from the body or cowl assembly areas, except for the dunnage box supports, must be replaced or included in the body structure of any special body installed.
2. It is mandatory that the body builder establish a structurally sound combination of body and vehicle structure by securely fastening together the body and the frame. This requires a rigid body design and a thoroughly planned system of bolts, welds and other fastenings between the frame and body.
3. To ensure structural integrity is maintained, the vehicle's front structure must not be modified. To avoid interference problems with suspension components, body attachments to frame should not protrude below side member flange.
4. An access panel may be provided in the vehicle floor by the body builder to service the in-tank fuel pump.
5. The body builder should consider the addition of sound insulation to minimize engine and fan noise in the driver compartment.

FRAME

1. 2- PIECE FRA ME - piece frame. The bolt together joint is located just ahead of the forward rear spring hanger on all models/GVWR.
   • The two frame sections are assembled by fixture at the assembly plant and are not intended to be adjusted in service.
   • The fasteners are not re-useable. If the bolts are removed, both the bolts and nut plates must be replaced.
   • The bolts are torqued to 350 Nm +/- 50 [258 ft. lb. +/- 37]
   • For measuring frame straightness, refer to the F- 53/F-59 Workshop Manual.
   • The 24/26K GVWR frame utilizes 50,000 psi high-strength steel.
   • For high-strength steel welding recommendations, refer to QVM Bulletin Q-140.
2. The frame for the F-53 / F-59 chassis is designed to permit removal of the engine and transmission out-the-bottom. This is facilitated by bolt-in No. 2 and No.3 cross members. Body builders should not add permanent structures which preclude powertrain removal.

ENGINE

1. Engine compartments must be designed to eliminate any air circulation restriction that would affect the air induction and cooling systems. F-53 / F-59 engine compartments must prov ide adequate flow-through ventilation to prevent local temperatures from exceeding recommended maximums. Limits for critical engine components are shown in the table (see Cooling) on next page.
2. No modification of the air cleaner inlet duct is permissible. Removal or modification of this duct will affect function of the mass air meter, possibly causing drivability problems and increased tailpipe emissions.
3. The air induction inlet should not be closed off from fresh air; underhood air should not be the primary source of air into the inlet. Fresh dry air should be provided to the air box inlet. This can be accomplished in various manners, such as, providing a vent opening in the front of the vehicle, closing off the engine compartment to prevent recirculation of Underhood air, and/or ducting of air from grill opening to inlet.

SUSPENSION AND STEERING

1. No vehicle or component alterations are allowed which restrict or prevent steering wheel, column, intermediate shaft, or coupling assembly collapse/stroke travel during crash.
2. Relocating the power steering fluid reservoir is not recommended. If the reservoir is moved, care must be taken to ensure that the power steering hoses are not kinked; hoses should have generous radii. Keep the reservoir upright in a vertical position while in the process of relocating it to ensure that no air enters the system.

TRANSMISSION

1. Transmission components are sensitive to ambient temperatures. Underbody ventilation is critical and temperatures in specific areas should not exceed those listed in the table (see Cooling) on the next page.
2. It is mandatory that the shift linkage be readjusted after linkage repair, engine mount replacement or shimming, steering column replacement or repositioning, transmission replacement, or any repair which could change the linkage adjustment.

A/C LINES

It is not recommended to attach/ retain the discharge A/C line or A/C suction line to any other components as these lines are subject to dynamic motion from the A/C compressor mounted on the engine.

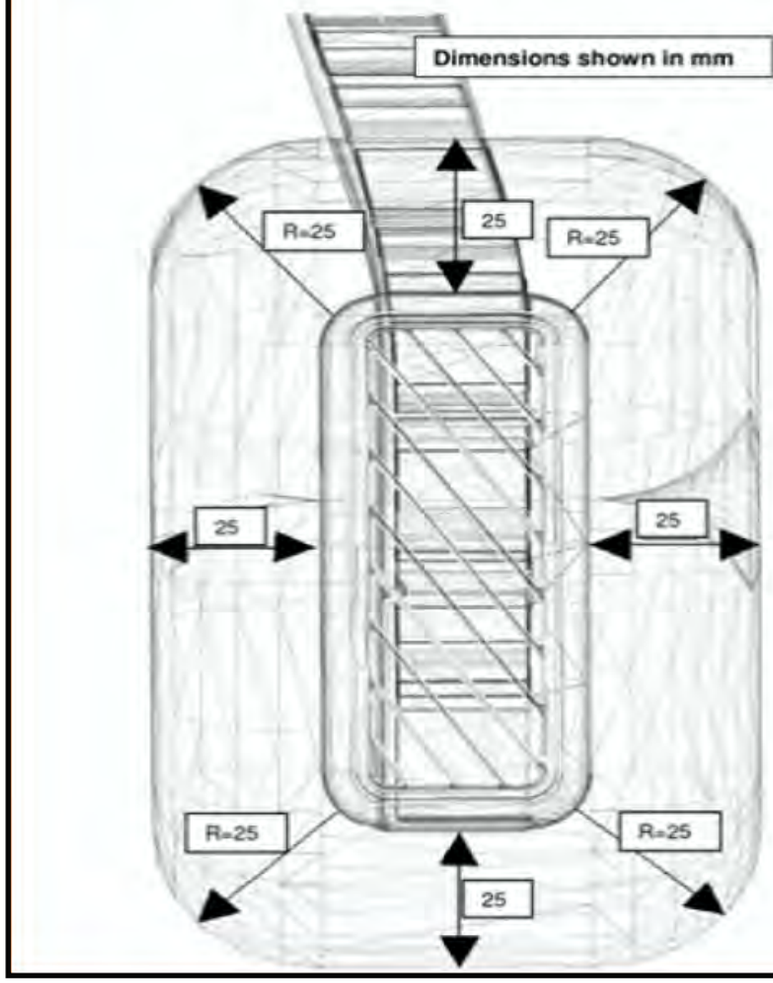
(Cont'd next page)

Accelerator Pedal Lever Arm and Pedal Pad Clearances

Suspended Pedals: Clearances to the accelerator pedal arm (below pedal pivot) and **pedal pad throughout their entire range of travel from idle to maximum depressed position** and full range of adjustment (if applicable) **must meet the following minimum requirements:**

Pedal Pad	25 or 35mm (/b)

/b 25mm applies to all components including floor covering and floor mats if floor covering has positive retention to body sheet metal or other rigid components within 200mm of lower accelerator pedal arm or pad in maximum depressed position. 35mm applies to floor covering and floor mats if floor covering does not have positive retention within 200mm of pedal arm or pad in maximum depressed position.



(Cont'd next page)

COOLING

NOTE: Refer also to "Design Recommendations - Cooling System" section.

1. Cooling inlet area revisions (grille, bumper slots, etc.) must not significantly alter air flow and should be free from blockage such as spare tires, added brackets, etc. Restricted air flow can result in possible engine damage for which the installer maybe held liable, should any claims arise.
2. A minimum frontal grille opening of 370 square inches is required to provide satisfactory engine cooling. The grille opening should be directly in front of the radiator or ducted in such a manner to direct airflow through the radiator core. Battery(s) or other components should not be mounted in front of the radiator or impede airflow through the radiator.
3. Engine and Automatic Transmission temperatures may be affected by completed front-end design. Component temperature limitations should not be exceeded (See table below).

F-53 and F-59 STRIPPED CHASSIS MAXIMUM ALLOWABLE COMPONENT TEMPERATURE

Components	Temperature
Fuel Rails / Pressure Regulator	200 F
Engine Ignition Sensors	250 F
EEC Module	175 F
Fuel Pump Delivery Module	167 F
Auto Transmission Sensors	250 F
Lower Transmission Area (mounts, gaskets, etc.)	250 F

NOTE: Use only Ford Factory Coolers / Heat Exchangers

EXHAUST

WARNING: Tailpipe Outlet Configuration

It is mandatory that the side tailpipe outlet configuration be retained, when any modification is made to the exhaust system, to reduce the possibility of exhaust fume entry through rear openings. The outlet should not be located near any vent, window, door or body opening. The tailpipe or attenuator of any modified system should be above the departure angle of the finished vehicle.

The proper torque sequence and torque values are to be followed as described below for tailpipe extension:

1. Place U-bolt (GU94-5221-AA) over the extension pipe (GU94-5263-AA), at the end which secures to the tailpipe (GU94-5H211-AD).
2. Place the extension pipe over the tailpipe pipe until fully seated.
3. Orient tailpipe as needed to comply with "Tailpipe Outlet Configuration"
4. Place the U-Bolt 17mm to 19mm from the end of the extension pipe and tighten the first bolt until the clamp/U-Bolt is snug against the extension pipe.
5. Torque the nut that was not already run down to 55Nm +/-5Nm.
6. Torque the first nut to 55Nm +/-5Nm.

FUEL SYSTEM

1. The fuel tank for the F-53 / F-59 chassis is located between the frame rails aft of the rear axle, and is supported by straps and frame crossmembers. The body builder should consider skid plates or protective bars if the body structure does not adequately protect the lower and rear surfaces of the tank.
   - Fuel tank clearance to body or frame components is 0.75 inches minimum. The size of any flexible body mounts must not be considered as part of this clearance.
   - Suspension components must clear the fuel tank by 2.00 inches minimum through their functional geometry.

   A fuel filler kit is provided with the F-Super Duty F-53 / F-59 Stripped Chassis. This filler kit is installed and then tested on a representative chassis to verify that it is capable of providing acceptable fuel fill function without spray, spitback or premature shutoff. However, Ford Motor Company has no control over how the filler pipe and vent line are installed or modified by the Vehicle Modifier. Consequently, the Vehicle Modifier must ensure that the fuel filler pipe and any extensions added to the fill or vent lines are adequately supported to prevent sagging that could cause spray, spitback or premature shutoff during normal fueling operations. The Final Stage Manufacturer is responsible for verifying acceptable fuel fill function on the completed vehicle.
2. Fuel filler and vent hoses must not be exposed to sharp corners and should have a minimum of 1.00 inch clearance to the body and surrounding body and chassis components (except frame). If fuel filler hoses are in the vicinity of edges or corners, then shield/abrasion protection should be used. Sink traps (low spots in fuel filler and/or vent hose) are unacceptable. Lengthening/relocating the fuel filler pipe can only be done with the hoses supplied in the dunnage box and steel tube provided by the body builder. No substitute hose material is allowed. Total length of the hose used in the system cannot exceed that of the original hose supplied in the dunnage box. The short shipping hoses provided on the chassis, as received, is for shipment only and should not be used in the final assembly of the fuel filler pipe. Failure to comply may void the evaporative emissions certification.
   - If fuel hoses or vent hoses are replaced, the new hoses must meet Ford Engineering specifications.
   - Extra connections in the fuel filler hose or vent hose, caused by the use of extensions, should be avoided.
   - Use only the Ford-specified fuel cap. Caps other than the Ford original (such as aftermarket locking gas caps) are unacceptable.
   - Heat shields should be added if they are located in the vicinity of the catalyst and/or muffler.
   - No additional hose can be added to the canister purge lines. Lengthening of the system can only be accomplished by replacing one or more of the steel tubes with a longer tube. The number of joints and length of hose in the system cannot be increased. If any of the hose is damaged, it must be replaced with CADBAR II low permeability hose
   - Fastener torque specs are 14 to 22 ft-lb for remounting of canister brackets to frame.

(Cont'd next page)

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

BODY AND ELECTRICAL COMPONENTS INSTALLATION RECOMMENDATIONS

ELECTRICAL

Although there are many points in the electrical system to connect additional circuits, certain connection points provided are recommended for reliability and convenience. This section defines the recommended connection points for the F-Super Duty Class A Motorhome (F-53) & Commercial Chassis (F-59) and the maximum allowable electrical loads.

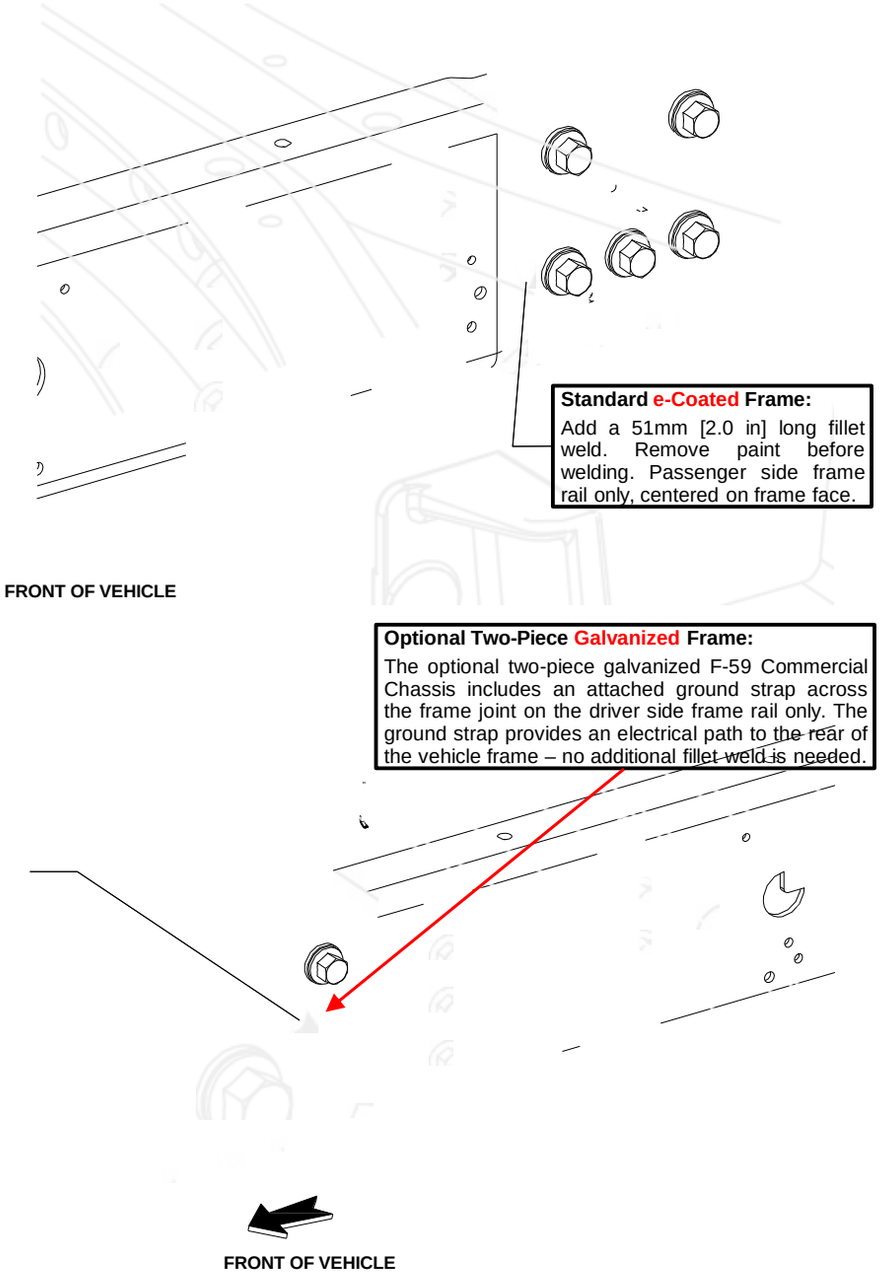
NOTE: When chassis wheelbases are lengthened, the body builder must maintain the original slack length in the wire harness leads that are affected by suspension movement (jounce & rebound).

WARNING: Electrical Grounding Requirement

The two-piece **e-coated** frame rail design on the F-53 Motorhome and F-59 Commercial Chassis requires a welded ground path be provided from the rear of the vehicle. Failure to maintain this ground path may interfere with the proper operation of any circuits grounded to the rear of the frame. It is recommended that a 51mm [2.0 in] long fillet weld be applied as shown to maintain this connection.

The optional two-piece **galvanized** frame rail design on the F-59 Commercial Chassis includes an attached ground strap across the frame joint. The ground strap provides an electrical path to the rear of the vehicle frame – no additional fillet weld is needed.

Qty	Components	Trade No.
2	Halogen Headlamp Bulbs	9004
10	Combination Rear Lamp Bulbs (tail, brake, turn signal)	1157
2	Back-up Lamps	1156
4	Side Marker Bulbs	194
2	License Plate Illumination Bulbs	194
2	Interior Dome Bulb	561
16 5	Instrument Cluster Bulbs - Small Bulb - Large Bulb	 37 194


Standard e-Coated Frame:
Add a 51mm [2.0 in] long fillet weld. Remove paint before welding. Passenger side frame rail only, centered on frame face.
FRONT OF VEHICLE
Optional Two-Piece Galvanized Frame:
The optional two-piece galvanized F-59 Commercial Chassis includes an attached ground strap across the frame joint on the driver side frame rail only. The ground strap provides an electrical path to the rear of the vehicle frame – no additional fillet weld is needed.
FRONT OF VEHICLE

Grounding blunt cuts - Figure 1 and 2

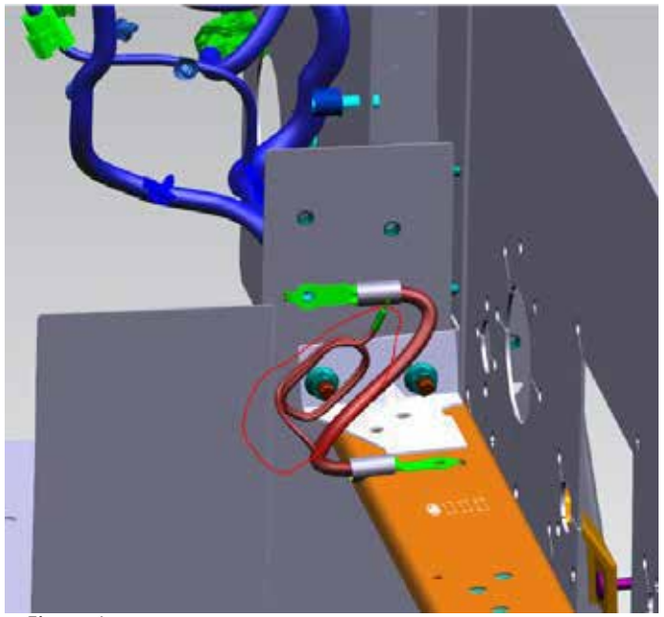


Figure:1

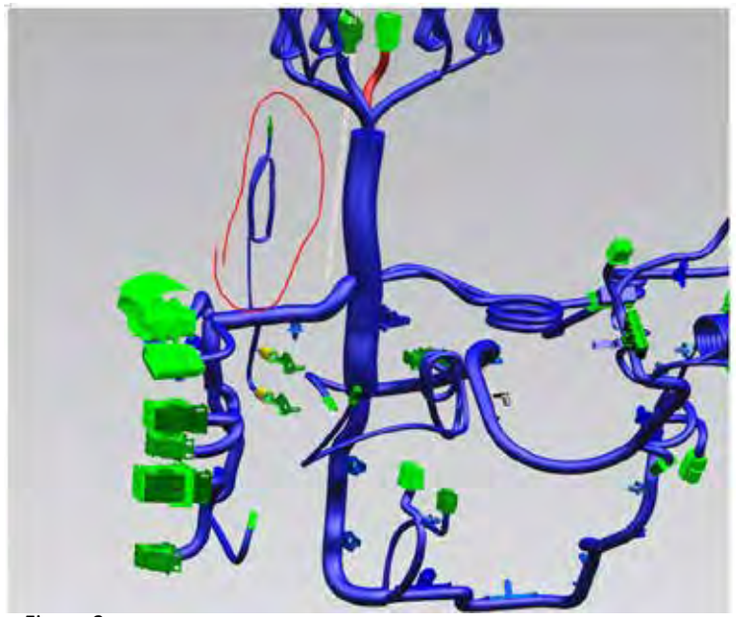


Figure:2

(Cont'd next page)

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

BODY AND ELECTRICAL COMPONENTS INSTALLATION RECOMMENDATIONS

LIGHTS CONTROLLED BY HEADLAMP SWITCH

The Headlamp switch on the F-Super Duty Class A Motorhome Chassis (F-53) utilizes FETs in the BCM to control the high and low beam headlamps. (Refer to the lighting-load table for max current.)

NOTE: Do not add marker lamps to the headlamp circuit.

Wiring access for lights to be controlled by the headlamp switch are provided at the front of the dash panel and at the rear of the vehicle. See jumper 14290-A for front lights and jumper 14408-A for rear lights. Splices and electrical loading (fusing and wire size requirements) of these circuits must be in accordance with general practices previously identified.

LIGHTS CONTROLLED BY STOP LAMP SWITCH AND TURN INDICATOR SWITCH

NOTE: Splicing into the stop lamp switch on vehicles is not recommended. A brake lamp feed is available in the 14A318-A Jumper.

If only turn signal function is desired for the added lights, use the lamp circuits available in the 14408-A jumper.

NOTE: Adding more lights than what is specified above can result in reduced life and performance of the flasher.

ADDED LIGHTS OR ACCESSORIES CONTROLLED BY ADDED SWITCHES

State, provincial and local laws may regulate the manner in which the fog and driving lamps are used, or may require additional equipment for the particular use intended for the vehicle. It is the buyer's/owner's responsibility to determine the applicability of such laws to the buyer's/owner's intended use for the vehicle and to arrange for the installation of required equipment.

When horns are installed, the location must be as high as possible with bell mouth of horn pointed downward.

WATER MANAGEMENT WITHIN THE ENGINE COMPARTMENT

In order to protect components within the engine compartment from water intrusion damage to engine components and the vehicle's electrical system, it is necessary that the finished vehicle meet the following performance standard:

- When the finished vehicle is parked on a level surface in a heavy rainfall (2.0L/min/m^0) [0.5G/min/$10ft^0$], with windshield wipers OFF and HVAC OFF, there shall be no leakage and/or drainage into the engine compartment with the hood/bonnet closed.
- The windshield to hood interface should be sealed to prevent water from the windshield from entering the engine compartment.
- Splash shields from the frame to body (wheel well) will need to be installed to prevent water from the tires from quenching the exhaust manifolds.

BATTERIES AND VOLTAGE REGULATOR

The battery location must be adequately ventilated, accessible for servicing, protected from road splash, and must also incorporate a shockless mounting.

The coach or chassis battery must not be located under the air cleaner inlet to prevent ingesting any gas that may be emitted from the battery.

Batteries should not be mounted in front of the radiator or impede air flow through the radiator.

If the original equipment battery is replace by more than one battery, or a battery of a larger capacity, the battery charging power supply circuit must be checked and revised to carry the additional loads.

F-Super Duty Class A Motorhome Chassis (F-53) has a separate wire to maintain "Keep Alive Power"; the addition of a battery cut-off switch must not affect the operation of this circuit.

The electronic voltage regulator base must always be connected to the battery, engine chassis ground when the ignition switch is in either the ON or START position. The voltage regulator will be damaged if the connection does not exist when the ignition switch is energized.

WIPER DELAY MODULE

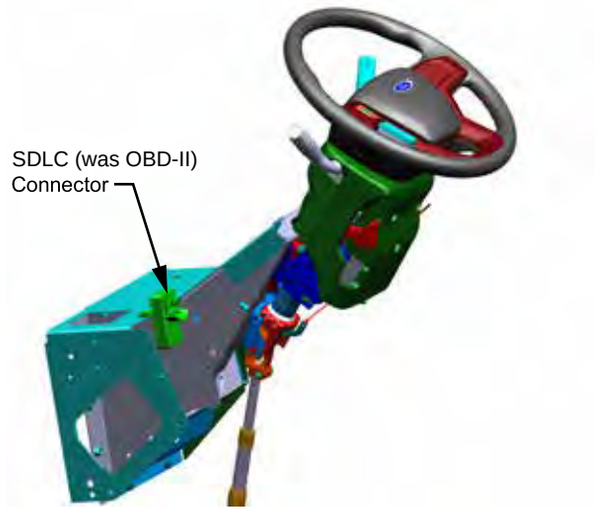
The Wiper Delay Module on the F-Super Duty Class A Motorhome Chassis (F-53) is not internally protected for a continuous high current load greater than 9 amps and must be protected via a properly sized circuit breaker. The existing 30 amp Wiper/Washer Module & Wiper Feed fuse in the fuse panel is sized for the maximum allowable in-rush current and does not provide appropriate protection to the Wiper Delay Module. The Wiper Delay Module must use a relay to control power to the wiper motor.

OUTSIDE AIR TEMPERATURE PROBE

An outside air temperature probe is provided in a temporary installed position on the chassis for installation by the final stage manufacturer. The probe provides data to the instrument panel's message center. The probe should be mounted in the path of outside ambient airflow in order to provide appropriate data to the message center.

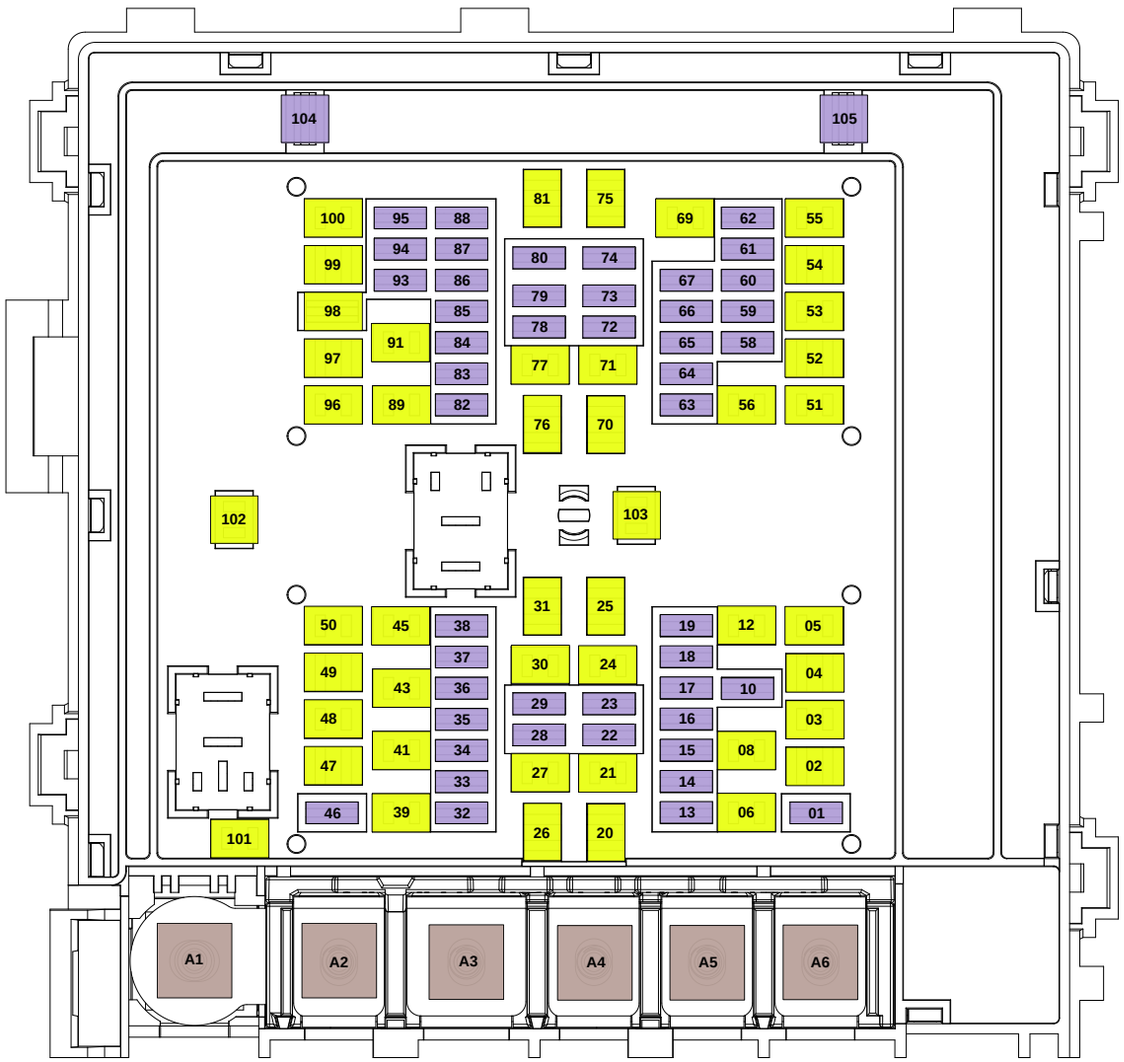
SDLC DIAGNOSTIC CONNECTOR LOCATION

The SDLC (was OBD-II) diagnostic service port Connector is Attached to the right hand side of the Steering column Support during chassis assembly. This is intended to be a "Temporary shipping location". It is the responsibility of the body builder to relocate the SDLC diagnostic Connector to the bottom of the dash panel (not supplied By Ford).



(Cont'd next page)

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS
PDB/HCFB FUSE LAYOUT

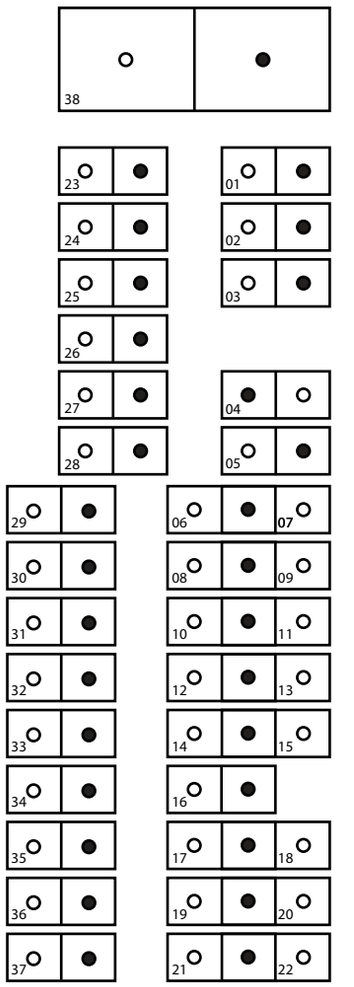


PDB - Fuse No.	Load (Amps)	Usage	PDB - Fuse No.	Load (Amps)	Usage
Fuse 01	20	Horn	Fuse 56	20	Power Point
Fuse 02	50	Front Blower	Fuse 58	5	USB Power
Fuse 03		Not Used	Fuse 59		Hydromax Pump Monitor
Fuse 04	30	Starter Motor Relay	Fuse 60		Not Used
Fuse 05		Not Used	Fuse 61		Not Used
Fuse 06		Not Used	Fuse 62		Not Used
Fuse 07		Not Used	Fuse 63		Not Used
Fuse 08		Not Used	Fuse 64		Not Used
Fuse 09		Not Used	Fuse 65		Not Used
Fuse 10		Not Used	Fuse 66		Not Used
Fuse 12		Not Used	Fuse 67	10	Brake On/Off Isolation Relay
Fuse 13	10	R/S Feed Climate Controls	Fuse 69		Not Used
Fuse 14	10	Adaptive Cruise Control Relay(Commercial Stripped Chassis) Not Used (Motorhome Stripped Chassis)	Fuse 70		Not Used
Fuse 15		Not Used	Fuse 71	30	ABS Valves
Fuse 16		Not Used	Fuse 72	10	(Spare)
Fuse 17	10	PCM R/S Feed	Fuse 73		Not Used
Fuse 18	10	R/S Feed to ABS	Fuse 74		Not Used
Fuse 19		Not Used	Fuse 75		Not Used
Fuse 20	40	Wiper Power	Fuse 76	60	B+ to BCM
Fuse 21		Not Used	Fuse 77	30	VQM PWR (B+) to BCM
Fuse 22	10	Wiper Module	Fuse 78	10	Trailer Tow Stop Lamps
Fuse 23		Not Used	Fuse 79	5	Not Used
Fuse 24	40	BCM - Battery Power in Feed 2	Fuse 80	10	trailer Tow Backup Lamps
Fuse 25	50	BCM - Battery Power in Feed 1	Fuse 81		Not Used
Fuse 26		Not Used	Fuse 82		Not Used
Fuse 27	20	B+ to Body Builder Connector	Fuse 83		Not Used
Fuse 28		Not Used	Fuse 84		Not Used
Fuse 29	10	Alternator 1 A - Line	Fuse 85		Not Used
Fuse 30		Not Used	Fuse 86		Not Used
Fuse 31	60	Hydromax Pump Relay	Fuse 87		Not Used
Fuse 32 (VPWR1)	20	Vehicle Power 1	Fuse 88		Not Used
Fuse 33 (VPWR2)	20	Vehicle Power 2	Fuse 89		Not Used
Fuse 34 (VPWR3)	10	Vehicle Power 3	Fuse 90		Not Used
Fuse 35 (VPWR4)	20	Vehicle Power 4	Fuse 91	40	B+ to Body Builder Connector
Fuse 36		Not Used	Fuse 93		Not Used
Fuse 37		Not Used	Fuse 94		Not Used
Fuse 38	10	Wiper Washer	Fuse 95	20	Stop Lamp Off Relay - Trailer Brake Controller
Fuse 39		Not Used	Fuse 96		Not Used
Fuse 41	30	Trailer Brake Ctrl Mode	Fuse 97	50	(Spare)
Fuse 43	30	B+ to Body Builder Connector	Fuse 98	30	trailer Tow Battery Charge
Fuse 45		Not Used	Fuse 99	40	Body Builder run/starter relay feed
Fuse 46	10	A/C Clutch	Fuse 100		Not Used
Fuse 47		Not Used	Fuse 101		Not Used
Fuse 48	20	R/A to Body Builder Connector	Fuse 102		Not Used
Fuse 49	30	Pump Electronics Module	Fuse 103		Not Used
Fuse 50	15	Injector	Fuse 104		Not Used
Fuse 51	20	Power Point	Fuse 105	15	Trailer Tow RH/LH Stop/Ture Relay Power
Fuse 52		Not Used	HCFB - PDB		
Fuse 53	30	Trailer Tow Park Lamps	Fuse A3	300	Alternator 1
Fuse 54		Not Used	Fuse A4	60	ABS pump
Fuse 55		Not Used	A1		Battery

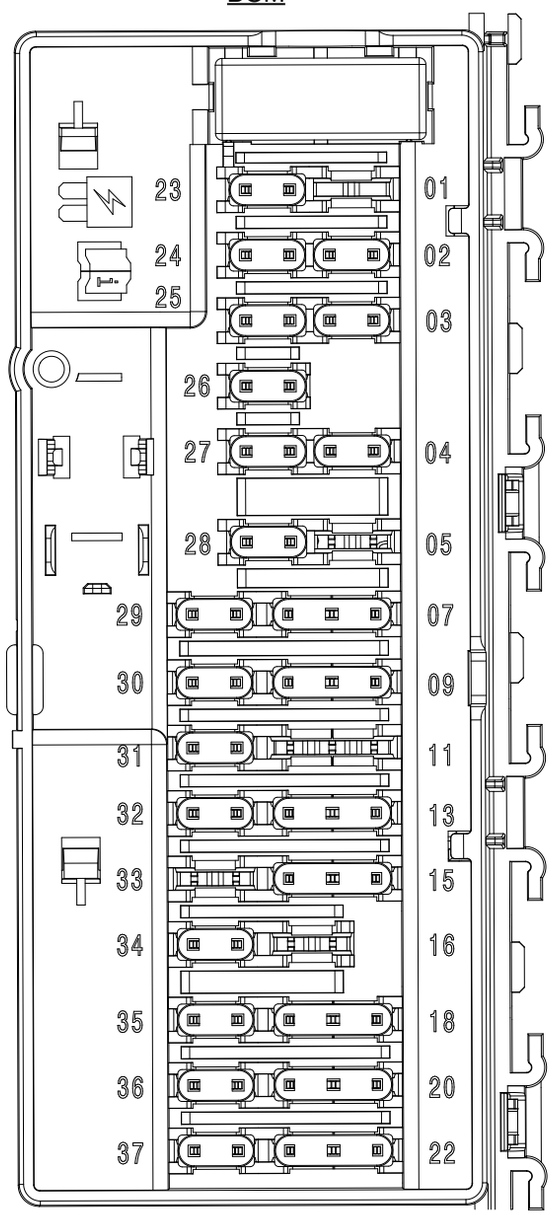
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS
BCM FUSE LAYOUT

Fuse Numbering and Power / Load Locations

● Power ○ Load



BCM



BCM Fuse No.	Load(Amps)	Usage
Fuse 01		Not Used
Fuse 02	10	R/A Radio Feed to Body Builder
Fuse 03		Not Used
Fuse 04		Not Used
Fuse 05		Not Used
Fuse 06	10	(Spare)
Fuse 07	10	SDLC
Fuse 08		Not Used
Fuse 09		Not Used
Fuse 10		Not Used
Fuse 11		Not Used
Fuse 12	7.5	BOO Switch BOO-Trailer Brake Connector
Fuse 13	7.5	SDLC/EWID
Fuse 14	15	(Spare)
Fuse 15	15	(Spare)
Fuse 16		Not Used
Fuse 17	7.5	Spare
Fuse 18	7.5	YAW Sensor
Fuse 19	5	Telematics Control Unit
Fuse 20	5	Ignition Switch
Fuse 21	5	Not Used
Fuse 22	5	(Spare)
Fuse 23	30	(Spare)
Fuse 24	30	(Spare)
Fuse 25	20	(Spare)
Fuse 26	30	(Spare)
Fuse 27	30	(Spare)
Fuse 28	30	(Spare)
Fuse 29	15	(Spare)
Fuse 30	5	Brake on-off Signal to 14A348
Fuse 31	10	Cluster/SCCM
Fuse 32	20	(Spare)
Fuse 33		Not Used
Fuse 34	30	(Spare)
Fuse 35	5	Tow Haul Switch
Fuse 36	15	Camera Lane departure Warning (Commercial Stripped Chasis) (Spare - MotorHome Stripped Chassis)
Fuse 37	20	B+ to Body Builder Connector
Fuse 38	30	(Spare)

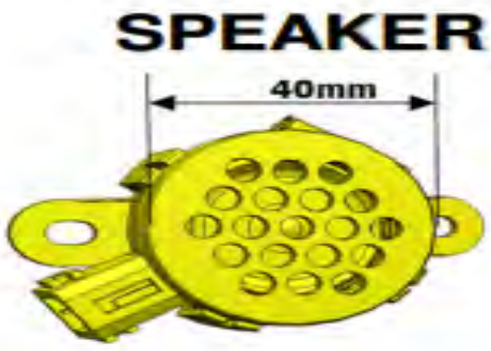
2021MY F59 STRIPPED CHASSIS SECONDARY AUDIBLE SPEAKER EQUIPPED WITH ADAS AND RADIO DELETE

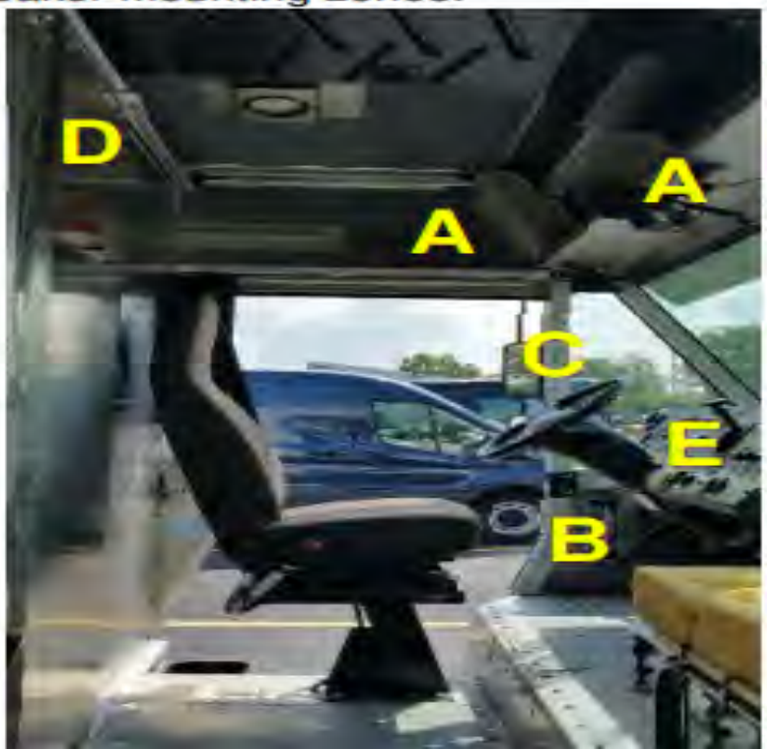
Description:
This Bulletin provides the recommended zones of where to mount the secondary audible speaker in relation to the vehicle cab space and driver.

Upfitter/Modifier has the option of mounting the secondary audible speaker (provided in the dunnage box) in an area close to driver so that the audible chime can be heard by the driver.

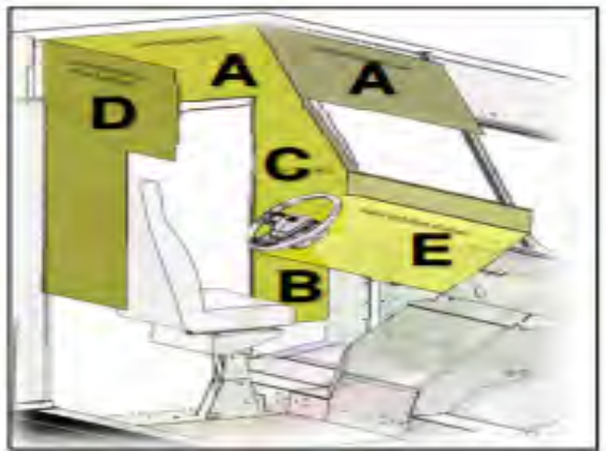
The intent is to mount the speaker exposed and not underneath the dash panel or other components that would inhibit sound from the speaker.

Recommended locations for speaker mounting zones:





A - Above Driver Door Centerline
B – Lower A-Pillar by Fuse Box
C – Left Upper A-Pillar
D – Behind Driver Above Cargo Door
E – Front Center at Reverse Park Display

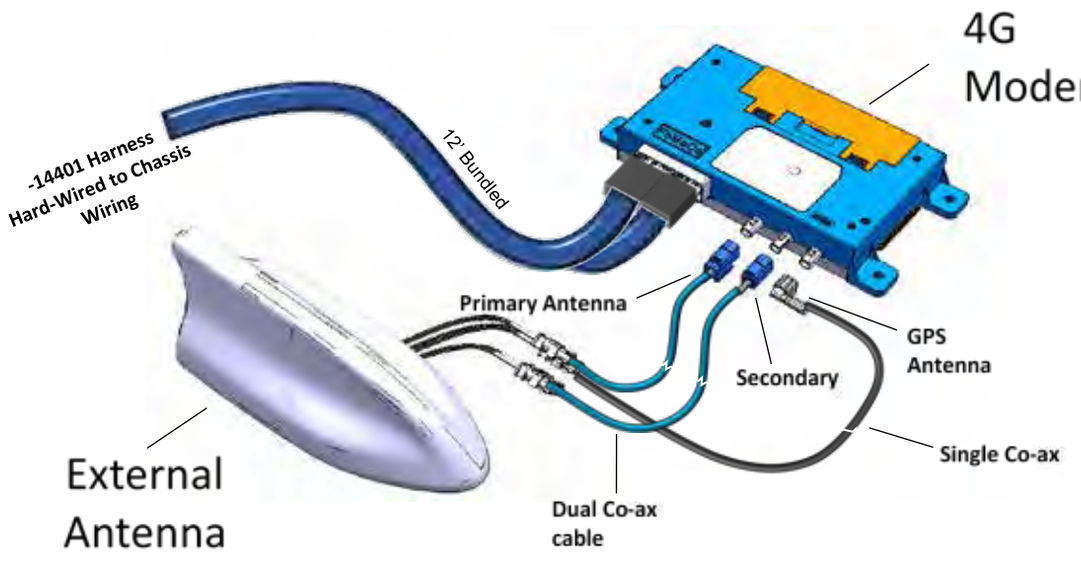


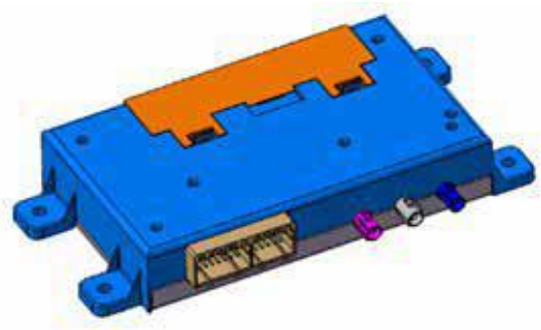
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION

ISSUE / DESCRIPTION:
Recommended installation for mounting GPS antenna and modem to make sure optimum performance is achieved for the WIFI.
NOTE: The embedded modem that is equipped on the F53, F59, F-650/750 and VN127 Stripped Chassis are VIN specific. The embedded modem must stay with the particular chassis it came with since it is programmed with the chassis and is VIN specific. Upfitters must ensure they keep the embedded modem with the respective chassis through their assembly process.

Modem System consists of:
- Modem
- External Antenna
- (2) Co-ax Cables - (1) Dual Cellular (1) GPS Antenna





4G EMBEDDED MODEM SPECIFICATIONS

Package environment/location
- Standard Packaging Clearances (6mm)
- Dry/protected location

Orientation Wi-Fi end of module pointed towards occupants/users, see Figures 1 & 2.
- Module orientation with the connectors pointing downward and positioned to divert water away – meet requirement RQT-191001-009919 (EC-0073) Module Connector Orientation

(Cont'd next page)

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION

Thermal

- Generates some heat into bottom plate. Should not be packaged in a small, sealed enclosure. Recommend providing space under module, 6mm would be sufficient.

EMC

- No issues with external antenna (all bundles)

Assembly/Service

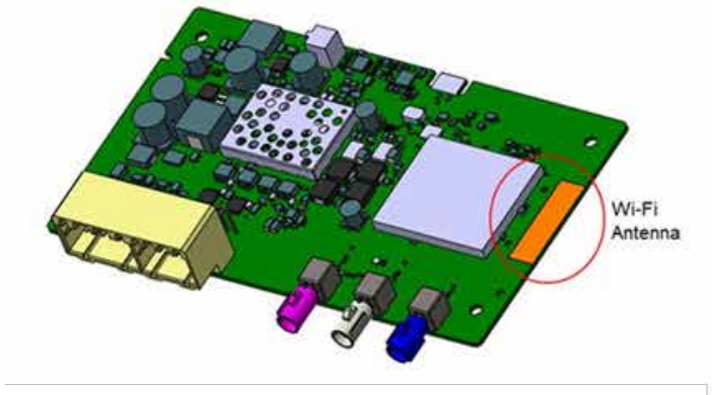
- Service - Must be serviceable without removing major components (ex. carpets, seats).

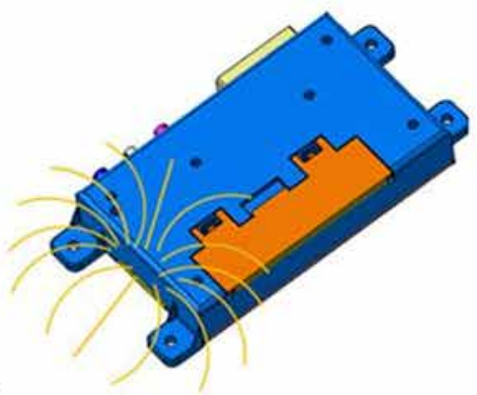
Other/reference:

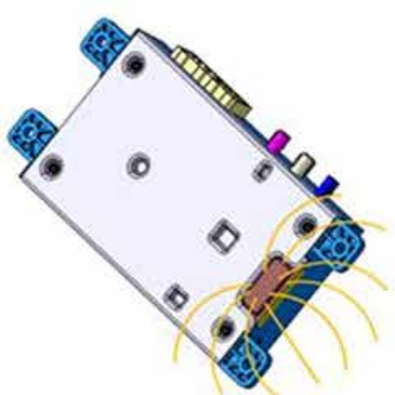
- Module Wt. = 400g (estimated)

The module is designed to allow the Wi-Fi antenna signal to propagate out of the top, bottom, and sides of the module.

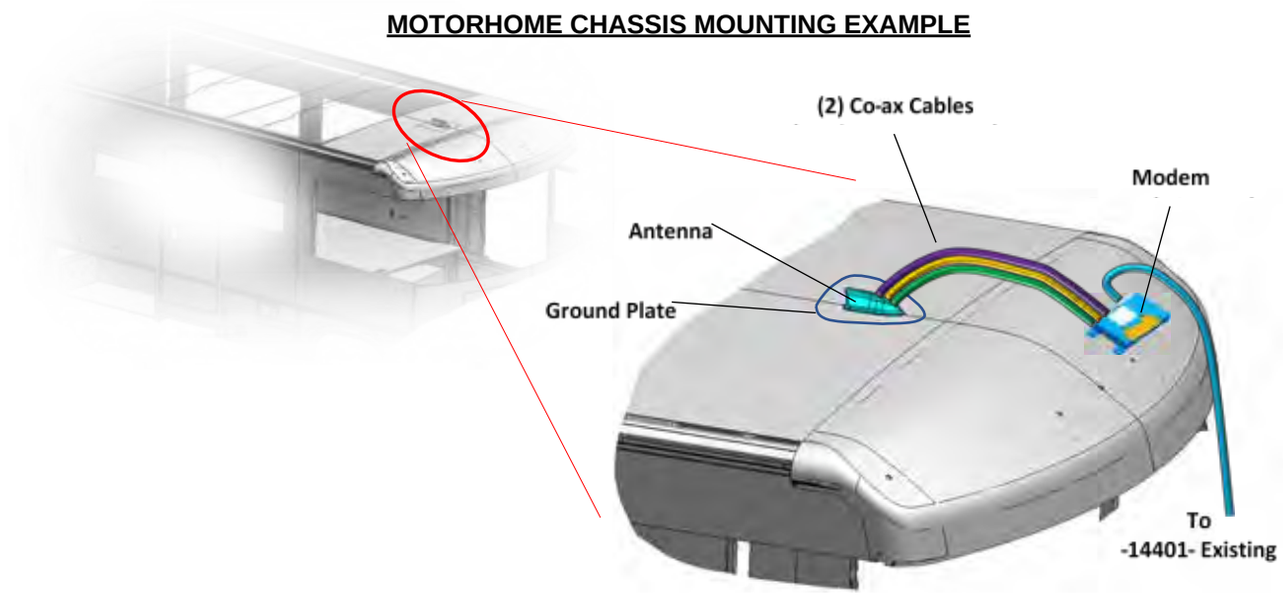
The vehicle environment and mounting location will have a large effect of on the Wi-Fi performance. In general, being closer to the source and reducing the amount of interference around the antenna will improve the signal strength.







MOTORHOME CHASSIS MOUNTING EXAMPLE

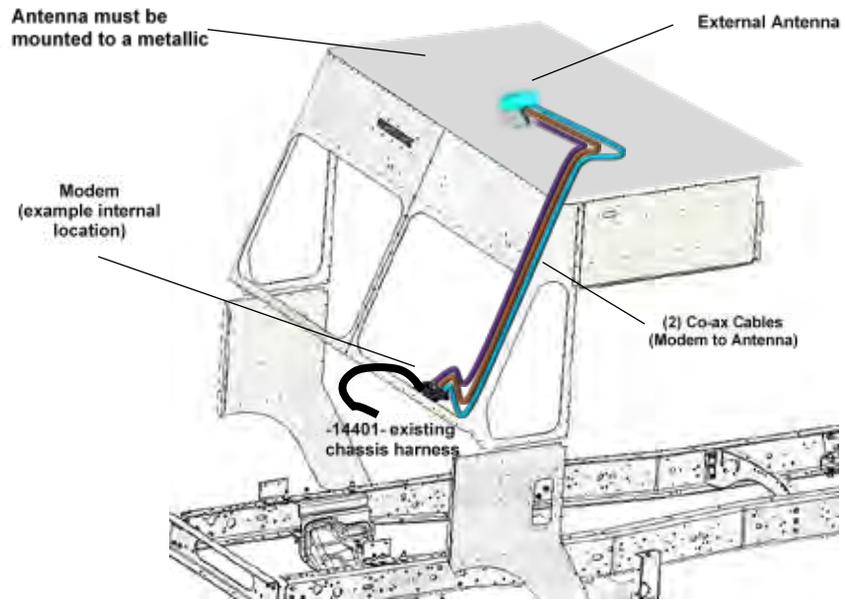


(Cont'd next page)

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

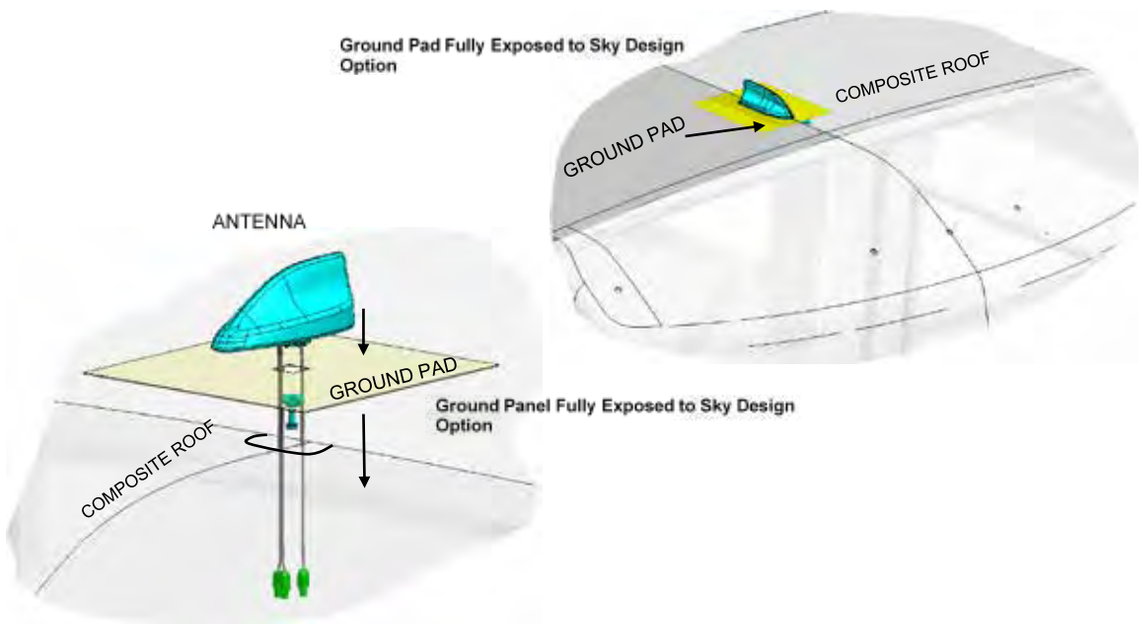
WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION

SUGGESTED COMMERCIAL CHASSIS MOUNTING EXAMPLE


Antenna must be mounted to a metallic
External Antenna
Modem (example internal location)
(2) Co-ax Cables (Modem to Antenna)
-14401- existing chassis harness

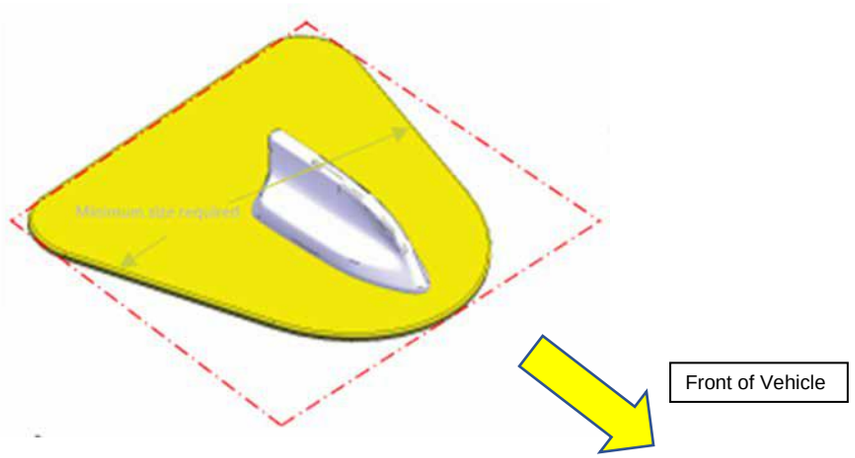
Antenna mounting

For vehicles with **Non-Metallic** surface there must be an exposed RF Performance Pad (Metal Ground Plate)



For vehicles with **Non-Metallic** surface there must be an RF Performance Pad (Metal Ground Plate)

Ground pad can be exposed to sky or submerged below body exterior.



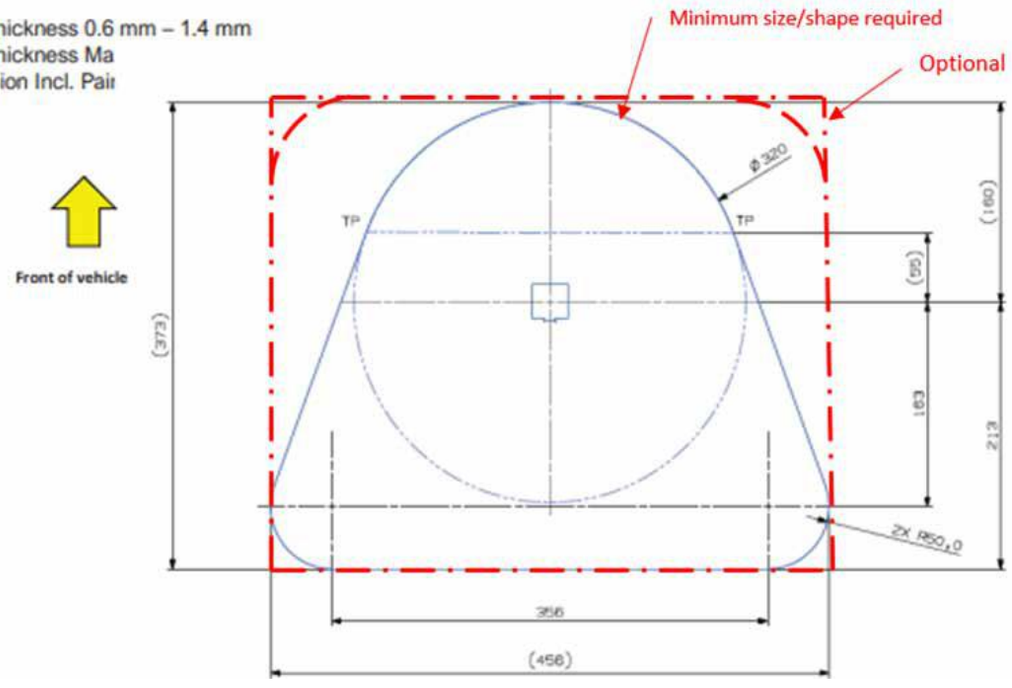
(Cont'd next page)

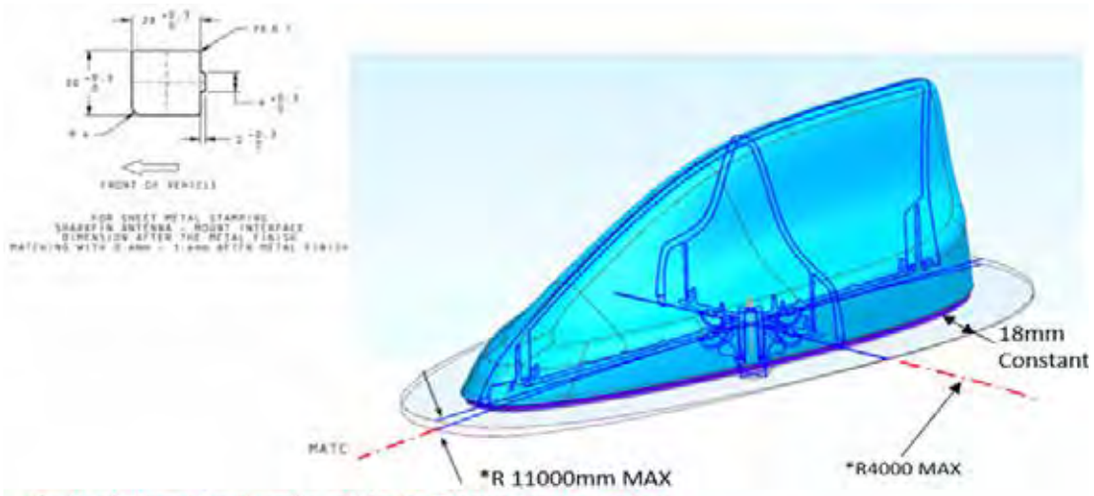
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION

Ground Panel – Minimum Surface Area Requirement

Plate Thickness 0.6 mm – 1.4 mm
Paint Thickness Ma
Dimension Incl. Pai



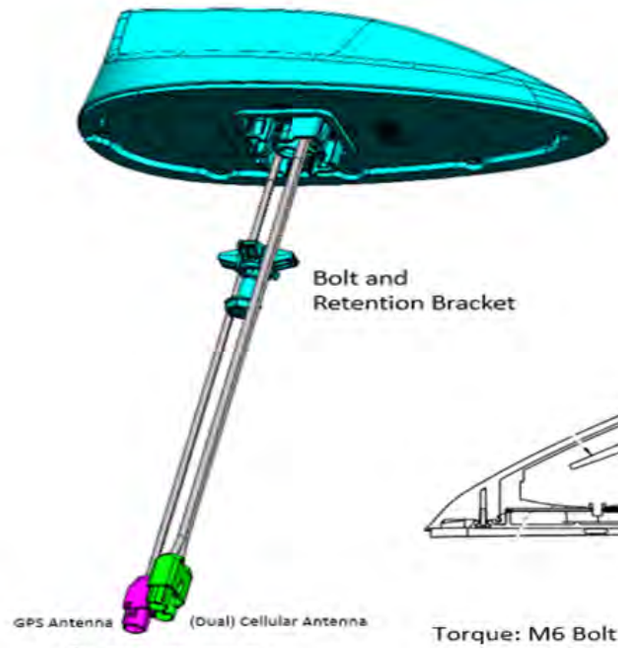


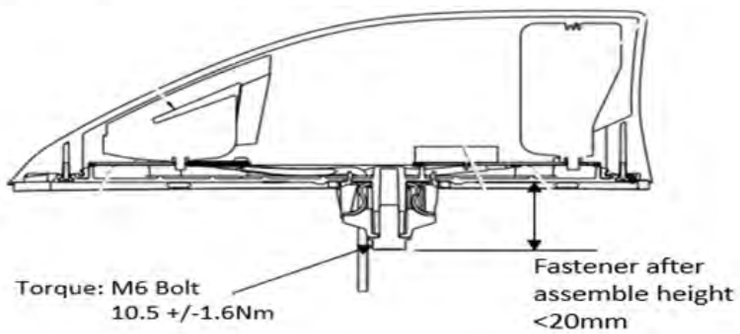
Radius of Ground Panel applies within the 18mm perimeter surface.
*Radius form will provide a (craftsmanship) gap appearance.
Compression of Dust Seal and Water Seal is achieved when module is fully installed in vehicle

(Cont'd next page)

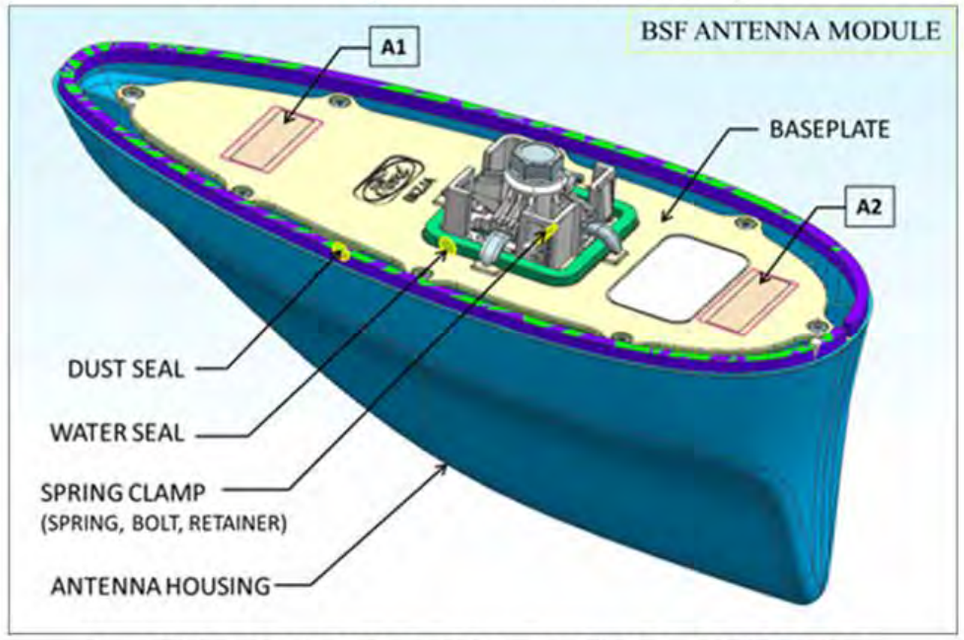
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

WIFI/EMMBEDDED MODEM AND ANTENNA INSTALLATION RECOMMENDATION





A1/A2 – Contact patch – Conductive metal woven gasket

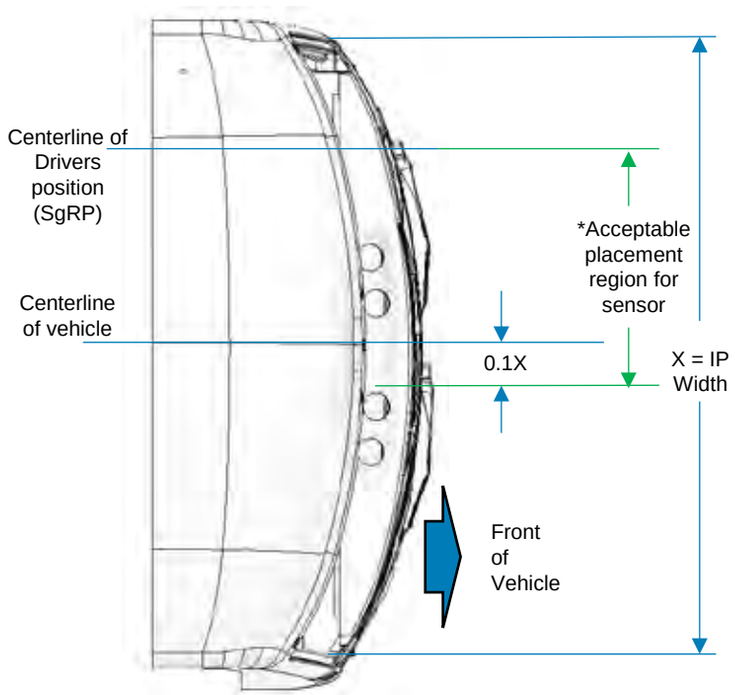


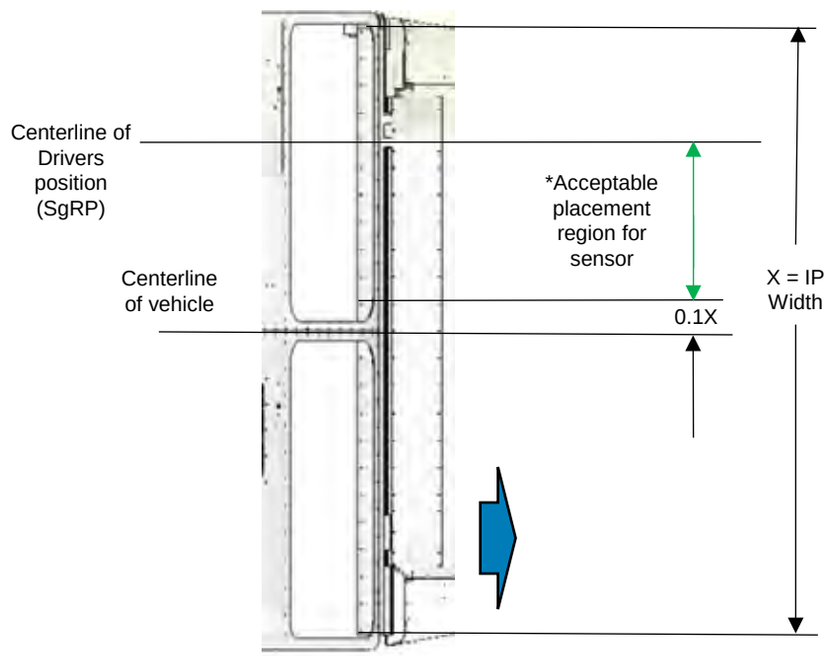
Ground Pad must make contact with the antenna "Contact Patch" A1 and A2.

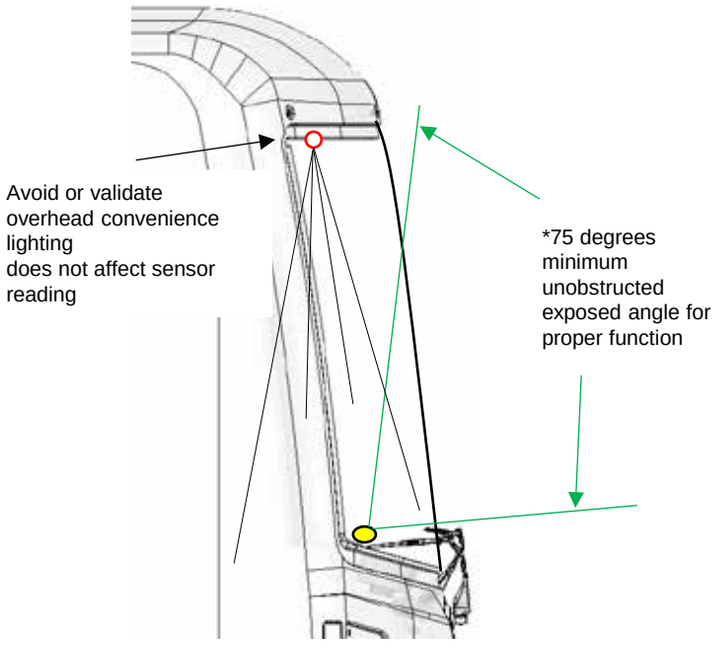
(Cont'd next page)

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

SENSORS: SUNLOAD PACKAGE FOR AUTOLAMP USE ONLY (FOR STRIPPED CHASSIS APPLICATION)






Avoid or validate overhead convenience lighting does not affect sensor reading
*75 degrees minimum unobstructed exposed angle for proper function

* Any windshield logos, frits, or other opaque components such that they do not block the sunload sensor from exposure in this region.

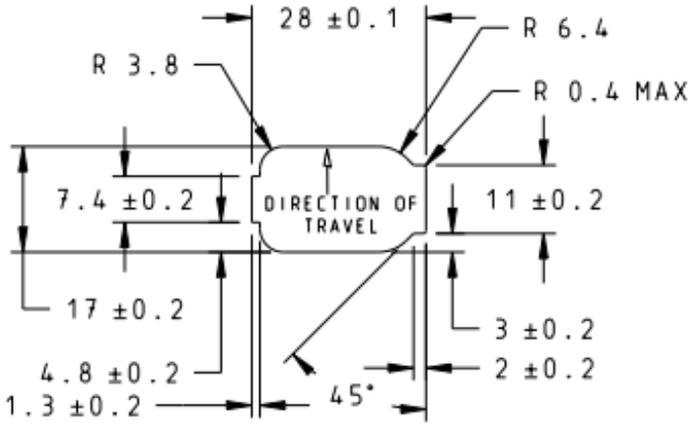
For the purposes of this requirement, the term "opaque" will include all materials which are less than 90% transmissible to light in frequency range from 380nm to 1400nm (visible light through the near infra-red spectrum).

All Sensor positions must be validated per Builder procedure.

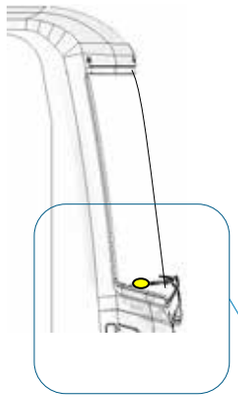
(Cont'd next page)

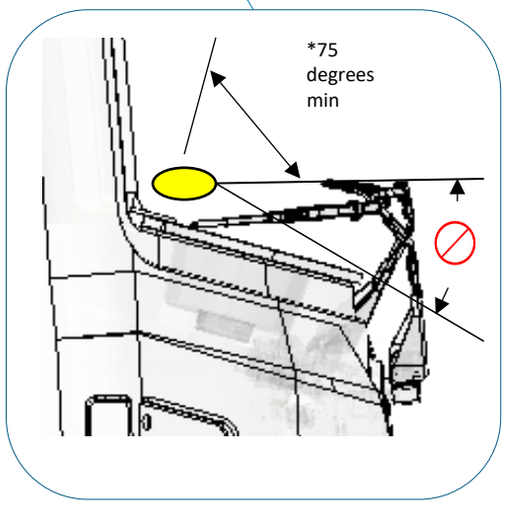
F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

SENSORS: SUNLOAD PACKAGE FOR AUTOLAMP USE ONLY (FOR STRIPPED CHASSIS APPLICATION)

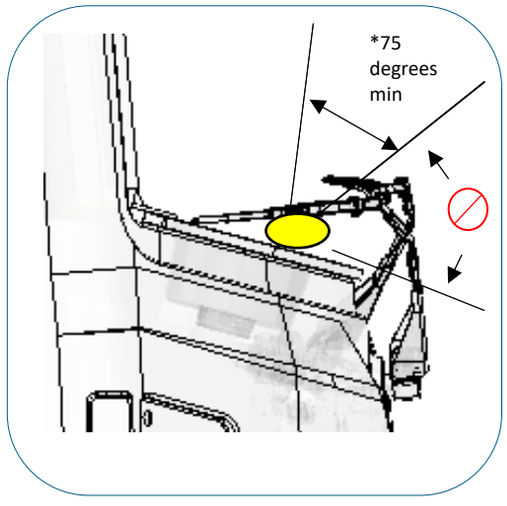


SUGGESTED IP ACCESS
TOP VIEW OF IP
INSTRUMENT PANEL THICKNESS
1.9 - 2.1

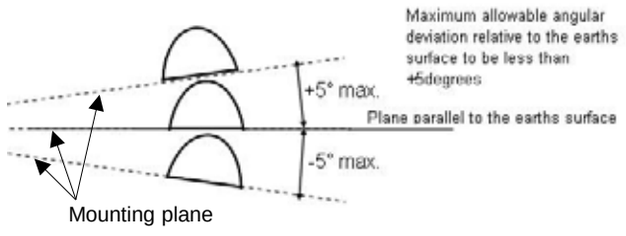




Avoid placing the Sensor below the resting Wiper Assembly
while maintaining minimum zone* to protect for outside wipe pattern (exp. Snow build-up)



If Sensor cannot be positioned above wiper zone then project minimum 75 degree zone from top of resting wiper to opaque region of windshield.


Maximum allowable angular deviation relative to the earths surface to be less than ±5degrees
+5° max.
Plane parallel to the earths surface
-5° max.
Mounting plane

(Cont'd next page)

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

SENSORS: SUNLOAD PACKAGE FOR AUTOLAMP USE ONLY (FOR STRIPPED CHASSIS APPLICATION)

Light Sensor Connection Check for Stripped Chassis

Purpose: Verify the light sensor is correctly connected and the analog signal is being received by the BCM for processing.

1. Set Ignition “On”.
2. Determine ambient lighting condition by observing the cluster.
   A. In dim lighting conditions the cluster backlighting will be in night mode (dimmed).
   B. In bright lighting conditions the cluster backlighting will be in daytime mode (bright).
3. Check for sensor connection and that the analog voltage signal is being sent from the sensor to the BCM by toggling the cluster dimming (delay timing is set in the cluster and will be off, 10 sec, 20 sec, or 120 sec).
   A. If the cluster is in night mode, shine a bright flashlight directly onto the sensor surface for 10-20 seconds and observe the cluster. The lighting should change from dim to bright and the headlamps should go off.
   B. If the cluster is in daytime mode, cover the sensor surface completely for 10-20 seconds and observe the cluster. The lighting should change from bright to dim and the headlamps should go on.

(Cont'd next page)

CHANGE CONTROL INDEX

LTRS	REVISIONS		
ORIGINATOR	CHECKER	ENGR APP	MATL APP
			INITIAL RELEASE
CHNU94-000000-BBLB-AA-01-FNA-ECN/1 RELEASED			20221222
KVINOTH4	RWAGNE43	SLAZARZ	--